NOTES OF THE
KLAMATH FISHERY MANAGEMENT COUNCIL
MEETING HELD FEBRUARY 14-15, 1991
IN EUREKA, CALIFORNIA

Members present: Nat Bingham, Virginia Bostwick, Bob Hayden, Lyle Marshall, Sue Masten (Vice-chair), Don McIsaac, Mel Odemar (sitting in for Spike Naylor), Lisle Reed, Frank Warrens, Keith Wilkinson.
Members absent: Naylor, Fullerton.

14 FEBRUARY, 1991

0900: Meeting called to order.

Introductions: Wilkinson -- Oregon offshore troll fishery; Warrens -- PFMC habitat chairman of the subcommittee; Reed -- Dept. of Interior; Odemar -- CDFG alternate for Assist. Director Spike Naylor; McIsaac -- ODFW, Masten -- non-Hoopa Indians; Marshall -- Hoopa Tribe; Hayden -- CA ocean recreational fishery; Bostwick --in-river sports fishery users; Bingham -- CA commercial ocean trollers.

Agenda item: Review and adoption of agenda and minutes

(Masten): Requested we look at agenda, move for approval of minutes, and any corrections.

Corrections to minutes:

- Section 11, of the 1991 harvest management plan; there were incorrect statements. The 3rd paragraph needs some clarifying language.
- (Odemar): Will provide clarification language for pages 11 & 13. (see Attachment #16).

Additions to agenda:
(Attachment #2)

- Appoint subcommittee to address public relations newsletter.
- USFWS request to address GSI
- NEPA compliance in long range plan preparation
- Discussion of 1991 harvests on 2-14 (before 2-15 scheduled discussion)

Agenda item: Report on planning activities of the Klamath River Basin Fisheries Task Force

(Wilkinson): Described discussion items on 2-05-91 Task Force meeting:
Discussion items:

- Plan adoption: it was not adopted because task force members were unable to study it thoroughly.
- FONSI for the Klamath River basin plan.
- Number of copies of the plan needed for mass-distribution. This issue was deferred until adoption of plan, copies are not available yet.
- Public review process for the upper Klamath River basin amendment.

- o Proposal to study non-point pollution and how to fund it. This proposal incorporated plans to seek funds from the state Water Resources Control Board.
- o Various project reports. (Spawner utilization, habitat survey, Karuk monitoring project, state projects)
- o Klamath River flow variance. Mel will be prepared to give a quick report on this topic.

Discussion of Klamath River Flows:
(Attachment #3) [Sue read the letter, Subject: Klamath River flows].

(Masten): The council has been asked to put out a similar letter that the task force sent out.

(Odemar): The Klamath is experiencing record low inflows into the basin. The snow pack is less than 40% of normal. Bureau of Reclamation (BOR) called a meeting to consider reduced flow schedules, and proposed constant 700 cfs commencing in February extending indefinitely until rainfall returns to normal. The USFWS and ODFW came up with an alternate proposal. The alternate flows which were recommended went all the way down to 500 cfs during the winter. The CDFG staff put together a draft response for the Task Force to send to Larry Hancock, mid-Pacific region Director of BOR. Although we do not have formally assured instream flows for the Klamath, the letter points out that there are 2 federal acts pertaining to the Klamath River basin; the restoration and scenic rivers acts which gives direction to the Secretary of Interior to recognize fishery needs when considering flows. At this point, no agriculture deficiencies are planned. The USFWS Sacramento office has sent a letter to Mr. Hancock stating that flows under 500 cfs should be considered only under emergency situations, and only under the condition that any water savings realized be set aside for future fish flows.

Q: Do we have concerns about wording of the letter?
(Masten): Possibly. I recommend we identify a need for an on-going task force to be created for the purpose of looking at the water flow issues.

Q: Are the numbers on the back of the sheet based on a flow study?
(Odemar): No, there have been no in-flow studies in the Klamath, but studies have been done in the Trinity River side of the basin. We have a weakness because of lack of in-flow studies. Because of this, we are limited to talking about flows for fish transport. Also, the amount of mainstem spawning has been assumed to be low or of no consequence. This may be a dangerous assumption. In low water years, the level of spawning in the mainstem may be quite significant. The winter flows may be quite important to the fisheries.

(Marshall): Recommended that in-flow studies be done to deal with water wars that might arise. Also, being able to justify flow levels is vital for management.

(Reed): Recommended that the task force letter be altered to remove the third paragraph, and put in something along the context of our concerns on low flow concerns; and we very badly need to have a inflow study, and if they would consider participating in a multi-agency study. And also request that a working task force be assembled for collecting data for establishing inflow information, and the best way to provide for fish and wildlife resources.

Additional comments on the letter to Larry Hancock (BOR):

- o We already have such an inter-agency group; we should take this under the auspices of the task force. Tributary work is already on-going, so let's take this to the task force.

- The alternate flow scheduled was not just a recommendation by CDFG alone, but involved the ODFW, USFWS, and the Klamath Tribe.
- The yield of the basin is considerable and a lot of water is leaving the basin.
- We have a desperate situation, and we shouldn't water the language down. The CDFG letter is a modest request.
- It is entirely appropriate to take on irrigation interests. The river water should be a priority during a drought year. Although we don't have evidence, the lack of priority is impacting us.
- We should bring to Hancock's attention of the two federal acts that must be considered. There are Indian rights for agricultural water in the upper basin. Agricultural needs are not the only beneficial uses of water within the basin.

Q: Is the basin refilling for irrigation and other uses besides irrigation?
(Odemar): The lake will be back to capacity in June. They will be filling it up sooner than it normally occurs. There will be no deficiencies for agricultural deliveries. There are endangered suckers in the upper lake.

Q: What is the concern?
(Reed): We are challenging the intent of BOR to keep agricultural flows at 100%. We do not know if the BOR has operating procedures they have to follow that force them to provide 100% of agricultural water supply. However, we will be taking on a battle that we may not need to. The problem may be to fill up the reservoir for threatened & endangered species. We don't have any data to back up our views.

(Masten): I would like us to adopt a similar letter. It is appropriate for our letter to address the water flow and agricultural supply issue.

(Wilkinson): We can appoint a sub-committee to address this, I suggest Marshall, Reed and Odemar draft a letter during their lunch hour.

***** Action *****
Marshall, Reed and Odemar to draft a letter for council review in this meeting.

Report on joint-subcommittee meeting on consistency of two long-range plans: (Attachment #4)

(Bingham): The committee, consisting of Rod McInnis, Mel Odemar, Ronnie Pierce, Jack West, Keith Wilkinson, and myself, and later joined by Don McIsaac, met to assess the consistency of the Task Force and KFMC long-range plans. The task force may make amendments to the plan on an on-going process.

We looked at each option agreed to by consensus by this council, and tried to find where the task force plan spoke to the issues we raised. We suggested revisions where inconsistencies were noticed. We did not look at the items that were not agreed on by consensus. On some options, we don't recommend specific changes but wanted to alert the council on certain provisions or issues.
Findings:

- The most important issues are concerning harvestable hatchery fish. We suggested new wording. You can find changes in the handout see options 5.1. I will try to get the new proposed table to the council. Nat also briefed the group about: 1) proposed word changes, 2) protection of certain stocks, and 3) the need for technical review.
- Inconsistency with the list of distinct stocks as identified by Kier & Associates. Technical people need to examine this list. The list identifies stocks which may not even exist.

- Look at 6.1, 6.2, 6.3. The committee thinks they are good, but they belong in task force plan since they pertain to habitat which are not pertinent to the council plan.
- We recommend alternate wording for policy 4.7 of the task force plan, and would like us to review this before we send our plan out.
- Other changes are minor editorial.
- We have recommended that each council member be provided with a copy of the Task Force long-range plan.

(Masten): This a good recommendation, and I thank the group for their efforts. We may decide that we will have to discuss this again depending on the outcome of other discussions of the long-range plan.

Agenda item: Development of the long-range plan for harvest management (Attachment #5)

(Masten): Did everyone receive the "Findings of Fact" with the minutes? This was assigned to Iverson, Barnes and Baracco last meeting. The presentation of the draft plan will be handled by Doug Alcorn. Doug is filling in for Ron Iverson today.

(Alcorn): We prefer to set a final date for receiving input so we have time to prepare this plan for distribution. We feel that the end of next week will be appropriate to the KRFRO to re-write the information. Under your direction, we eliminated the Options Field and a established a list of approved options. The re-write of section 4.1 is a narrative description of what follows and how it was generated. Option 18 is now 7.12, and has been included in the list with an asterisked footnote indicating it has not been approved by the council at this point. The appendix contains the entire list of options; approved and un-approved, so the reader can read them as they were presented.

Comments by KFMC members:
- Option 7.12 cannot be approved without removal of option 7.2; we cannot have both in the list of options.
- Option 7.2 was passed in La Jolla by this council with one abstention. Option 7.12 was presented to this council by the Hoopa tribe and we agreed to send it out to the public, but presently we do not have consent.
- The language needs to be clarified that this would be an alternative to 7.2.

Q: Nat, would you not consider minimum needs as well as other needs when considering the alternate option?
(Bingham): I've attempted to negotiate this issue with the Hoopas, and we stand with the language as it is presented. There was compromise over this language in La Jolla. The two positions should go out to the public for review. Let's let the public respond to this issue.

Additional discussion on option 7.2 alternate:
- We may have acted too quickly at La Jolla.
- The issue is fairly well drawn for public to consider.
- The council has already dealt with this issue. The decision was to include this alternate option with the original option 7.2 for public review.
- A footnote may be all that is needed to present to the public.
- It is critical that the public be aware that the Hoopa proposal be clearly identified.

***** Action *****
Re-title the alternate option presented by the Hoopa Tribe to "7.2 alternate".

Discussion of findings of fact: (Continued)

- Maximum Sustained Yield (MSY) should be re-written to be more easily understood. I'd like to direct staff to do this.
- This is first draft that people are looking at, a new draft will be submitted which wasn't available today.
- The "fish language" may be difficult to understand.
- I suggest preceding the plan with a glossary of terms. Similar to the task force plan glossary.
- A discussion of hatchery and natural stocks does not belong up front. This more appropriately belongs later in the document under management. To dive right into this would confuse public.
- The plan needs discussion of socio-economic issues for each fishery.
- The plan needs clarification on drift gill-nets to overcome misunderstandings; on estuary harvest statements, and with due respect to all agencies, the subject of illegal in-river sport/ocean fishery harvests. Are there discrepancies in the USFWS data?
- Subjective statement on page 5, under illegal in-river harvest, "poaching of local stocks". On page 6, "may have been significant...." these need re-wording to reduce their subjectivity. Statements should be backed by statistics or at least put percentages in. Also, page 2 bottom, returns to in late 1980's... does this statement insinuate that the gene pool mixing is occurring? What was the purpose of this statement?
  (Odemar): Yes there is a mix. Hatcheries do not use fish from outside the basin.
- Some findings were hard to believe, some statements, if taken as fact could present great concern. Erroneous statements need to be removed or looked at. The 1989 comment on sport harvest is untrue.
- I think it was an excellent document. We should present it to public, rather than to beat it to death.

Q: Are hatchery fish spawning in the wild?
(Odemar): Yes.

Q: How will these comments get resolved? I am concerned with the poaching issue giving incorrect impressions. As a matter of findings of facts, it gives impressions that some of these numbers are not significant, and additionally, we only talk about management of two stocks. Just chinook and coho salmon, not other species.
(Bingham): The critical rewrite will come after we get the public comments, then we can go through option by option, section and section. I think the staff has to adjust the schedule, we haven't really given it to the public to let them have their best shot at it.

(Masten): Staff would like all comments by 2-22-91. Is there further discussion?

Further comments by KFMC members:

- If it is going to be presented as fact, this needs to be stated. The document was intended to help people understand the plan.
- The section on illegal harvest should be changed before the plan is sent out. I hear a lot about the concealed take, and that the USFWS is not accounting this correctly. We need to point out that all fish are accounted for.
- I would like to title the document "background information" instead of "finding of facts".

(Alcorn): A second review by this council, to ensure that each concern has been taken care of, may not be practical because of logistics. Staff will have to make edits, publish and send out by 3-1-91.

Q: Have the corrections already been identified?
(Barnes): Yes, the tech team input was from Alan, Ron & I, and we looked at the three sections. For the most part, staff will be responsible for content of document.

Q: Have you reviewed this document?
(Barnes): We will review this document.

Agenda item: Update on public involvement and NEPA requirements
(Attachment #6)

(Reed): The issue is whether or not the KFMC is considered a federal agency. If we are, we would be obligated to follow the NEPA process. Such an environmental review might lead to writing a drafting of an Environmental Impact Statement (EIS). To do such a statement, we ordinarily would have a public scoping process, etc. The question would be in two parts:

1) do we constitute a federal agency, and subject to the NEPA process?
2) when do we want to start an environmental review process?

Or we could wait until we generate opinions of our own, and do the EIS process at a later date. Also, the EIS process may not be a requirement, and also we may only need an Environmental Assessment (EA) process versus a EIS process which would be less complex. Do we want to commence on a EIS process, depending on where our plan takes us?

(Wilkinson): [Read FONSI document]

(Reed): The process doesn't matter whether the impact is positive or negative; the process still needs to be done.

(Masten): We should consult with solicitor's office on whether the NEPA procedure is needed.

(Bingham): We have a EA document on the task force plan which has considerably greater impacts than a harvest management plan. The EA considers other alternatives. This would suffice for the basin restoration plan.

(Warrens): It would be wise to seek confirmation with the Interior as to what the NEPA requirements would be. The harvest plan may need consideration.

*** Action ***
(Masten): Every one seems to be in agreement, no need to go further. We'll **agree to seek Interior opinion.**

(Alcorn): We need to discuss the schedule prepared by Tricia Whitehouse (Attachment #6). The schedule depends on the council's plan being mailed out for public review by March 1st. Also, this council must establish a date on item 1b, the closure of the public comment period so we can publish the federal notice. And you should discuss the meeting in Coos Bay. Someone has requested this meeting be held in Brookings, Or.

(Wilkinson): The only concern with Coos Bay is the meeting facility which needs to be arranged.

Q: There is another handout (Attachment #7) requesting a meeting for Brookings, Oregon. Do you want to move the meeting?
(Wilkinson): We have had meetings there. However, the Coos Bay place serves the needs, but we will be OK with Brookings if the council so wishes.

Q: Will the comment period be standardized to 45 days? If so, we should be consistent in the event we need to comply with NEPA.
(Reed): To go through with the NEPA process, we will need to have a 90 day draft review document.

Q: This is a congressionally established council, are we still subject to NEPA?.
(Reed): The appropriate time period seems to be up to the entity in charge.

(Masten): The dates and locations for the meetings will be:
Weaverville -- March 19
Yreka -- March 20
Coos Bay -- March 26
Eureka -- March 27
Fort Bragg March 28.

(Masten): We'll need to coordinate all this so that comments can be sent to the public by April 15th.

(Reed): We will entrust to Ron's office for the first rounds of public involvement, all this needs to be ready by March 1st. If Ron's shop cannot do this, they need to speak up now. If a involved review is needed, the March 1st date will be jeopardized, in addition to all the other meeting dates.

Additional discussion of public comment closure date:

- Q: Do you want to conform to make it a 45 day period?
  A: It seems to be an adequate amount of time.
- Q: What is the final date for closure of public comment? I like April 15th.
- It is important to stay with the March deadline because of short time available between publication and public hearings. We should provide staff with additional address' to shorten the turn-around time.
- March 28 in fort Bragg is the last day. This makes it only two weeks turn around time.
- I am in favor of longer time period, because of the income tax deadline. By speeding it up, we open ourselves to criticism. What is gained by the extra fifteen days?
  (Masten): We are trying to standardize the process.
- The fifteenth was the deadline for the upper Klamath document.

(Masten): The staff must get addresses by February 22.

(Calame): In the past, most all comments were in prior to public hearing, few comments came in as a result of public hearings.

(Masten): The Brookings site was raised as a alternate city.

(Wilkinson): I support that we have as many meetings in Brookings as practical.

End of discussion.

Public Comment:

John Greenville -- Salmon troller, Morro Bay Fisheries Association:
- I'm concerned on "Allocation Strategies", option 7.2. The purpose of the KFMC is to make everybody play with the same set of rules. The alternate 7.2 may not be fair to all parties when one user is singled out.

- Allocation of harvest could read allocating remaining harvest, needs consistency, not always guaranteed.

Dave Bitts -- Salmon troller, President of Humboldt Fisherman's Marketing Association:

- Sec. 3.10, monitor all anadromous species. Are you wanting to monitor all species?
- Section 5.1, "prevent the extinction" wording looks like the rephrasing of "weak stock management". GVC is an example, there was a run, not now, the chinook run is now extinct. I doubt this council had the power to prevent that extinction. The appropriate approach is to address the problems in the watershed. You cannot restore a weak run of fish by managing harvest.
- Section 5.2, I hope this isn't for managing a fishery for generation of data. We've seen too much management for statistics already.
- Section 5.3, hatchery production left out here. I suppose this means natural productions will remain, hatcheries should be considered.
- Don't understand 5.5. Will review and comment again.

Paula Yoon -- Del Norte Fishermen's Marketing Association:
(See Attachment #8)

Bill Duncan -- President of Shelter Cove Marketers Association:

- Discussing the water issue, the chronicle quotes Secretary Lujan that he thought it would be good to turn over federal water development projects to the states. This may be a good idea because of reduced bureaucracy. As long as the drought occurs, the few Klamath R. salmon stocks drive harvest of the other stocks within KMZ.
- Commenting on the plan, laws are important, you should identify the laws.
- The commercial fishermen in Shelter Cove and Fort Bragg feel they'll make no money.

Bryce Kenny -- Trinidad City Council:

- I encourage a subcommittee to take a firm position to impress to the Bureau of Reclamation (BOR) the needs of water to the fisheries. In California there is a groundswell movement to address water needs of the state, fisheries should be represented.

Jim Johnson -- President of Independent Commercial fishermen:

- The KFMC and Task Force should jump in with the other agencies to get flows in the Klamath and Trinity Rivers.
- The fisheries above Coos Bay are limited by the KMZ fishery, we should all be interested in flows, and work together.

Carol Williams -- Yurok tribal member:
(See Attachment #14)

(Warrens): Have you read the habitat section on the plan? The concerns you've expressed that proposed legislation are addressed. I believe it will be handled appropriately, but will have congressional legislation. It will be done collectively with our representatives.

(Williams): Then we need meetings on all these issues to all get together. I don't see anything happening.

(Masten): We discussed the flow issue earlier. I proposed we set up a Task Force to address Klamath R. flows. We want to quantify minimum flow needs.

(Williams): Would this group address congress?
(Masten): Yes, it could be a way to get is started.

(Williams): I'm anxious to see this occur.

Richard McCovey -- Chairman, Yurok Fishers Association:
(See Attachment #14)

Karole Overberg -- Bureau of Indian Affairs:
- Regarding the comments in the plan description "Taking of illegal fish", the Yurok fish are counted in this Indian fishery. They are counted as subsistence or commercial harvest. Those fish may be sold on the illegal market, but are counted in the Yurok fishery.

Vlayn McCovey -- President Resighini Rancheriea, Yurok Fishers Association:
(See Attachment #14)

Frank Hostler -- Yurok Indian:
- Two years ago we were in SF Airport, I stressed the pesticide issue. Now, two years later, you are beginning to be concerned about it. We are all Americans here, all concerned about habitat.
- I've never felt like a poor Indian, never inferior or superior. We Indians are just like you, we are now concerned about the Klamath R. water. Pollution is a problem. Water is low, polluted, contaminated by up-river uses, at expense of downstream users.
- The fish, to us, we feed them, they feed us. We need to respect that and take it. We're like children with a toy. We should look at ourselves.

Wesley Ammon -- Yurok Fishers Association:
(See attachment #14)

End of public comment period.

(Reed): If anyone wants to converse with me later about the water situation they can. The water issue is one common need for all of us. I can possibly help in this issue. There was a meeting of the agencies, the BOR is to try to accommodate problems concerning fisheries needs in this drought year. They also have purge flows, instituted measures of getting cold water in specified ways. We should address them in a professional manner to get things done. In the past, there is a tendency to fight with the other agencies. For example, look at paragraph three in the letter discussed earlier. Are you trying to get water or are you attacking their agricultural practices? BOR may be able to regulate flows as requested in the letter, but there are other options, such as buying water elsewhere. I would re-word the paragraph as follows... (reads a re-write of paragraph 3). We might want to write this under a group of agencies. The point is to find out their options, address the water issues, get more water for fish. I'll work with you on this.

***** Action *****
Over lunch, Lyle Marshall, Lisle Reed and Mel Odemar will work on paragraph 3.

(Marshall): This is a tough assignment. All data we have indicates that low flows affect fisheries. We have people discussing the water flow issue in Washington D.C. The BOR and BIA is discussing the Trinity R. issue. I don't see where the professional approach of tiptoeing to BOR's door will be effective. The problem is water needs in the river.

(Masten): The purpose of the assignment, after hearing all concerns, is to clarify the language.

(Marshall): I would encourage a letter about Trinity R. flow needs also.

(Masten): The assignment is for you to come up with a letter on our behalf.

(Reed): Do you want to get the water from agriculture users, or just get the water, regardless of how they get it?

Additional comments on the Klamath R. flow issue:

- First time I've heard unanimity from the public. We need to listen to our public. There are two policies in the plan which address large water diversions and developments, and protect in-stream flow needs of Klamath R. fish. These policies don't mean a thing if we don't act on them.
- The Task Force's first order of business was to develop an educational program in the public schools. Our future generation must not be guilty of making the same mistakes our generation has made. Once we've educated our young, we will have responded to our direction.
- Is the 400,000 acre-feet really what we want? Is it sufficient? I think this letter should stress equal sharing of the pain of the drought, but should be done professionally. The appropriate shares should be addressed.
  A: We can't say how much more than the 400,000 acre-feet we need, but the 400,000 is a precedent of minimum flows received in the past.
- If water is in short supply, we should convey the message that all users are cut equally.

*** **Action** ***
(Masten): The assignment is clear. The public and council's voice has been heard. The committee will address this.
We are: 1) agreeing on the revised language in the draft; 2) including the language drafted by Lyle Marshall; 3) including a glossary, possibly using the glossary used in the Task Force plan.

(Bingham): We should present the two versions of these two options, with clarification of the footnote.

(Masten): We all agree that our comments will be presented to KRFRO by 2-22, along with addresses of special interested people, for mailing.
Do we address the adoption today or tomorrow?

(Bingham): We should look at these changes tonight, address this tomorrow.

(Masten): This is the final assignment, after looking at the subcommittee's recommendations, before going forth with this plan.

<u>Footnote for Option list: language from Marshall</u>
** Presented by the Hoopa Valley Tribal Council as alternative language to replace 7.2. This option has not been unanimously approved by the KFMC.

<u>Agenda item: Report on 1990 ocean harvest of Klamath chinook</u>
(Attachment #9)

(Dixon): (Gave presentation as a tech team representative). The harvest is normally allocated to ocean and in-river fisheries. The fraction of harvest remains constant (matures); the immature harvest varies. A larger allocation to river fisheries will increases ocean survivors. A larger allocation to ocean fisheries decreases ocean survivors because we can't distinguish between spawners and non-spawners. Therefore, depending on the allocation split between ocean/river the number harvested will vary, survivors will vary, and the numbers spawning will remain fixed.

Barnes spoke about stock projection.

(Barnes): (Discussing handout #9) Age 2 should be 509,000, on fifth page. Look at age 2 regression chart on page 3; correction is r-square is .89. We'll talk about stock regression of 88,100 age III. 1980 represents el Nino

brood year (was dropped from regression). 1985 was included, which results in a stock projection of 175,000 III in ocean. This didn't look reasonable, so the next test was to throw out the 1985 data point. Tech team referred to this point as the "power" brood. The relationship was stronger when the 1985 data point was removed. The salmon tech team is looking at question of slope of curve near origin which is not too reliable. (when poor jacks yield low 3's). For age IV, 1985 was not thrown out. How well are we doing on the projections? Go to appendix A. These are comparisons of post and pre ocean abundance estimates for ages 3 & 4 Klamath river fall chinook. Predictors are highly variable on age 3's, but good for 4's. Last year, we under-predicted on 4's, but over-predicted on 3's. Average is .96 for IV's, and is a good predictor. 1986 was the first season we put in harvest rate management. A certain percentage of jacks are susceptible to harvest. The cohort analysis was run back several years.

(Odemar): 1985 is when we began making estimates; so far as cohort analysis is concerned, only recently have fish been tagged to answer questions we have now. The cohort analysis goes back to 1979.

(Barnes): The Klamath ocean harvest model goes back to 1986. What are we going to do with this? If we take this, and assume that we will use the present estimate numbers; what will this give us if we apply normal harvest rate of .35 ocean for vulnerability and .525 for in-river? We ran the model and using these rates, and these age 3/4 numbers, we came up with 21,200, which is much lower than the floor escapement. Therefore, we ran the model to determine what the harvest rate must be to bring up escapement to 35,000? You would have to have an ocean harvest of .1875 as opposed to .325. In-river is .25, you would end up with a spawning escapement of 35,000 natural spawners. A Fort Bragg CPUE model, put together by Mike Morford, appears to be a good estimator of abundance.

(Bingham): The 1990 CPUE may reflect sampling error, and the actual point may be closer to the line than what we see here. The samplers may have gone to the more successful fisherman. I have a little bit of information which suggests that the actual was lower, which would make a better relationship.

(Barnes): Yes, it won't change it too much but it will be a better relationship. This approach may help our credibility to predict age III stock abundance. We're not sure why this relationship exists but it is a good one. You may want to consider this year putting in a in-season option of putting in the may-june catch and put it into the regression to give an indication of what the new prediction might be to adjust the catch prospectus. It would have to be incorporated as one of our options. This appears to be a reasonable tool for in-season adjustments. Pre-seasons quotas could still go against the 88,100. There would be a opportunity to increase harvest quota if we went with this plan.

Q: Is the team recommending we do this?
(Barnes): We're saying that there is an apparent relationship, but we're not sure why.

Q: How much of the fishery is left after July 1?
(No answer)

Q: What was the zone fishery?
(Bingham): If we had one on the same schedule, we may not have enough fish on the table to do it.

(Barnes): One other report card is page 3, table 1, the estimated number of fall chinook entering Klamath river. We are over harvesting age 4's. The problems have been from difficulty of predicting these age classes, and predicting where these fish will be. Post-season estimates are based on the

CWT information. Last year's rate of .375 was set by PFMC. The Arcata USFWS can run the stock model on their lap top computer anytime to see comparisons.

Q: What do the percentages equate to in numbers?
(Barnes): We may have to re-run the model, but we have the equating numbers for the percentages. What else are we going to cover?

(Masten): Lets do other tech team reports now.

Agenda item: Other tech team reports -- Scale sampling project

(Barnes): Our age composition is very important. We have been using CWT. Ron suggested we look at scale analysis for the entire Klamath river basin, and to give scenarios and costs. We have done a preliminary analysis; it is feasible, and we perceive the necessary sample rates. The USFWS and Hoopa Tribe will be involved in the sampling effort. Also, sampling would be done at weirs; the Shasta, Scott, and Salmon rivers would all be sample sites. These would be collected at no charge from either Department (USFWS, CDFG). Also scales would be collected at the hatcheries. The entire population age composition from all these sources (including Junction City, Willow Creek and South Fork Trinity weirs) would number about 4,000 scales. USFWS could do the scale analyses in a time frame by January 1st for about ten thousand dollars. How would this project go forward? It would be done prior to the FY 1992, so that the bulk of it can be pushed in FY 1992. An April proposal submission would be needed to the USFWS KRFRO. This program could be approved by June, 1991. A strong recommendation by the council could pass this study through.

Q: When would the FY work begin?
(Barnes): This work would be implemented for the 1991 fall chinook run, and the proposal would be written by USFWS with tech team input. The task force will fund individuals, agencies, etc. The USFWS volunteered to do this work. This would need to pass by June, and will allow us enough time to set it up.

Q: Are we too late for this year?
(Barnes): No, all we have to do is recommend that the Arcata USFWS office enact this work, and prepare the proposal in cooperation with the tech team.

Q: What is the purpose of this study? Would we get variability from year to year?
(Barnes): Right now, all we have is the CWT information. In all likelihood, this work would provide the age composition of the entire run. The annual variability would be difficult to address. We will not be interpreting between hatchery and wild fish.

Q: What would be the value of a single year of data?
(Barnes): What was the actual number of CWT recoveries in the river?. Lets say that we have a 1,000 CWT's. Statistically, the scale sample would be much more reliable (4,000 scales versus 1,000 CWT's). This would give us more reliable data.

(McIsaac): What would the value be? The 1991 snapshot of what happened would be more reliable; we may be able to go back and correct old database files.

(Bingham): If we could go through one complete brood year, this would provide better information than just one year.

(Barnes): If we are to write this we should go for more than one year.

Q: Are we going to have enough scale samples?
(McIsaac): The fishery workers should be able to provide enough scales.

(Barnes): We have not done all the statistics yet, we will be lumping the entire basin, so we should be able to derive a good estimate.

(Masten): Charlie Fullerton will take over the chair.

Q: In the stock projections of age II, II versus III versus IV, can we perceive this as glimmer of hope for our work?
(Barnes): Its an average, may not mean much. Age II's don't help us that much, an inaccurate assessment.

Agenda item: Tech team report on GSI sampling

(Barnes): Regarding Genetic Stock Identification (GSI), the last suggestion was to set up a sample from Fort Bragg as a test. Alan Baracco brought up a point that we have several thousand samples from a existing database of work done in the early 1980's. The bottom line was that the information was close to the CWT information. If we accept the results of this report, there is no reason to go through with the GSI. Work was done when the abundance was much higher. If we are to go through with this, the tech team needs to look closer at the report. All I have is an executive summary.

(Bingham): There were two recommendations for action from Jerry's report. 1) scale sample, 2) Fort Bragg sampling. I want to be sure we take action on these two recommendations.

(Masten): My understanding is that we should consider the use of CPUE as an management tool.

(Barnes): We should look closer into this apparent relationship. The tech team is recommending the scale study approach. The estimated cost will be close to ten thousand dollars.

(McIsaac): We received GSI materials from USFWS estimating the cost of establishing a GSI lab within the USFWS. What is the cost of charging it out to the Washington Dept. of Fisheries? Is this GSI business worth pursuing?

(Barnes): I don't see pursuing GSI for this calendar year but for next year. We need to provide a better database analyses for determining GSI suitability.

Motion:
(Wilkinson): I'd like to suggest that we direct the tech team to go forth with the scale analysis proposal.

(Reed): We should suggest that they devise a 5-year program instead of a single season study since the cost is not unreasonable.

(Wilkinson): The time frame needs to be realized.

Q: There was a seining season that was phased out, was it CDFG or USFWS or both?
(Odemar): We have already put together program reductions awaiting direction eliminating our beach seining. The USFWS has also decided to eliminate the seining operation due to funding limitations. Additional people will be necessary to sample at the hatcheries, for the basin-wide scale analysis work. Sampling the hatcheries will be touchy at the time that fish are coming in. There will be a cost to the state to do this work.

(Cates): Our beach seining program is funded by the BIA, we have not yet had exact decisions on what will be done. The beach seining is not totally discontinued yet.

(Barnes): One clarification in the motion would be that the tech team is not a implementation organization; the actual proposal would be submitted by the USFWS. They will be requesting the funds, and will be the entity responsible for getting this through. The tech team will help out Brian's office.

(Cates): The tech team should set up just how to set up the study, the number of scales necessary. The tech team needs to provide the specifications.

Q: Does the council know what we will be getting?
(Wilkinson): What I intend to get is a proposal that will be sent to the task force for funding.

Q: What will the scale work give us?
(McIsaac): Without the scale data, we would continue to estimate the 3, 4, component through the CWT method which has been shown to have high variability. The scale method might give us a higher level of reliability.

**** Motion carried by consensus ****

Motion:
(Bingham): I move that we support the CPUE method for Fort Bragg as a way to adjust the in-season regulations. We have had this on the table for 2 years, but there has been no action. The tech team has looked at this and shown that it holds up. Past projections have resulted in hard hits for user groups, and therefore a formal motion is necessary. We should make the recommendation in view of the fact that the tech team has taken an conservative mode.

(Motion second by Hayden.)

Comments to the motion:

- We must be careful. If we used this as guide we may need some sideboards. The variance may result in abundance by coming up with a CPUE of 10 by month of July. Other than gross findings, this method may not provide any management value.
- This method has some value, we would be amiss in not asking the tech team to look at everything available to their use.
- In the event of variance between pre-season estimate and in-season tool, action could be taken to make adjustments.
- This tool would allow us to either increase it or decrease it variability of error.
- The PFMC is relatively inflexible, probably won't accept this.

(Bingham): I'll broaden our motion to include our recommendations.

(Masten): Our biologists aren't recommending this as a tool but are identifying it as a potential management tool. I am in support of looking at alternative tools, but not comfortable with requesting that they use it at this time.

Q: How does this affect in-season in-river fisheries?
(Barnes): You would run the model, based on sharing agreements, and it would generate a new estimate of (e.g. 125,000) age III ocean population and then each group (ocean and in-river) could have a new allocation. However, note that it can work both ways: in years where pre-season abundance was overestimated, the CPUE model would probably lower the estimate of allowable harvest.

Q: Alan Baracco says you can't do in-season adjustments, how do we resolve this? Also, as an in-river user, any adjustments would close us in that type of scenario, what is on the other side?

(Barnes): What you have done is to crystallize all the ramifications that would have to be addressed. Those are not tech team issues, but are policy issues.

Q: Don't you have to have a breakdown of Klamath versus other stocks?
(Barnes): No, it is based on landings.

Q: This could burden the northern fisheries. How will we make up the shortfall?
(No answer)

(Fullerton): What does the tech team recommend?
(Barnes): Two review teams will be looking at it this week. We won't get it for this year. The data shows an apparent relationship of Fort Bragg CPUE to the age III population. Biologically, we can't explain this. We can explain the age II in-river versus age III ocean relationship (biological relationship).

(Fullerton): Would the team feel that the tool would be useable?
(Barnes): I plead the fifth amendment. We've known about it for a few years, so we are making the Council aware of this relationship.

Q: Is the motion in line with what Jerry is saying?
(Bingham): I'm willing to modify my motion to suit people's concerns to keep this motion alive.

(Fullerton): We're going to let Mike Morford explain this relationship.

(Morford): Dr. Ken Henry (of the PFMC salmon tech team) said it has merit. He couldn't find anything wrong with it. And how would it affect the Indian fishery? It wouldn't have affected it this year. However it would have affected the Coos Bay catch. This is a tool we can use in-season to correct our mistakes. If they were corrected in years of peak abundance, this would help. The ocean populations for the Sacramento river stocks all seem to correspond.
[Note: Note-keeper unclear of whether or not abundance correlates with Fort Bragg CPUE]

Q: 80% of the ocean troll catch is by early July. How much of the sport catch is yet to come? Are those very much different?
(Morford): I think 70-80% of the catch is still out there by July.

(Barnes): May/June catch of 26,000 was 12% of the total catch for Coos Bay. The Fort Bragg May/June catch was 25,000 out of 50,000 (slightly over 50%). Look at 1989, the Fort Bragg catch was about 18,000 for May/June, out of a total catch of 70,600; this was less than one third. For Coos Bay, the May/June catch was 110,000 out of 250,000. Predicting abundance and distribution has been very difficult.

(Bingham): The team could be conservative if such a method is applied; in contrast to post-season methodology with no in-season adjustment. Could Don McIsaac make an acceptable motion for this?

(Masten): The Scientific and Statistical Committee (SSC) has already gotten it and they are already looking at it. So, we don't need to take any further action on this.

(McIsaac): The KFMC recommend to PFMC the Fort Bragg CPUE be reviewed by the SSC in their September meeting, with comments to come from that meeting this spring.

(Bingham): I will accept the amendment.

(Fullerton): Second agree?
(Warrens): I support the motion, with the condition that the KFMC process with review abundance methodology coincide with the review process as stated by Don. I can report to the KFMC on the earliest possible dates by the SSC. My concern is that I'm not sure its necessary to wait until September.

(Fullerton): I suggest that we're asking them to do something, let's not confuse it with the following meetings. I suggest we give them a date to report back to us.

***** Action *****
(Warrens): There's a set procedure. I'll get back to the council on this.

(McIsaac): The July meeting, would it be possible for a starting date for this process?
(Fullerton): Ask them to review it, they'll put it in the system.

(Wilkinson): I support this motion amendment. I would like to be part of the SSC review, and invite their recommendation.

(McIsaac): This proposal would not imply subsequent endorsement by this council.

***** Motion passed by consensus. *****

Agenda item: Karuk subsistence harvest report
(Attachment #15)

(Hillman): You'll notice on the back page, the final figures. This monitoring effort occurred from 9-15-90 to 11-15-90. Fishing activities were monitored through the daylight hours.

Q: Would the monitoring system stay the same for '91?
(Hillman): Yes, our plan is to continue to fish, this is the first year we've gathered these numbers. It's probably the worst year we've ever seen, and the numbers are reflective of an overall reduction of effort. During that two month time, there was consistent effort, but low. Could be attributed directly to lack of harvest.

Q: Was the 9-15-90 start date triggered because of fish availability?
(Hillman): No, the funding process triggered this. This was funded with excess '90 funds. We submitted a proposal for a 2 year monitoring effort to the Task Force, for the '90 and '91 fishing seasons. This report is not reflective of our entire fishing season. The only thing we saw this year, that resembled a fish "run", was about 2 weeks prior to the start of the monitoring effort.

Q: Historically, the run could be passed by this time?
(No answer)

(Reed): I appreciate the data being collected, it's a small quantity, but I think all harvest needs to be accounted for. It's good that it was done professionally.

(Masten): I Commend the Karuks for instituting this monitoring effort. They were very successful in this effort.

Q: How do you estimate this '90 catch?
(Hillman): Disastrous.

Q: Can you estimate a percentage of harvest for this year compared to years in the past?
(Hillman): It's hard to establish an accurate figure. One impression is 5 years ago, it wasn't uncommon for one fisherman to harvest 100 fish/day.

(Fullerton): Thank you. Good job.
Any other harvest up-dates?

Agenda item: Discussion of spring chinook salmon

(Barnes): In March '90, the USFWS Arcata office put together a run size estimate for the Klamath R., driven by returns to the Trinity R. system. To describe the methodology, last year the BIA looked at the potential for an in-river commercial fishery. The BIA prefers that the tech team be responsible for modeling in the future, but the USFWS feels it will ultimately become their responsibility.

(Polos): The USFWS isn't the management agency for spring chinook. If the tech team is assigned this, it'll come back to our office. But it is not our fishery to manage. The KFMC has this responsibility.

(Barnes): We have preliminary data for this year. The Arcata field office people use this information. The projection data will come out later. The actual data for the TRH returns, for 1990, is 2400 fish. It's probably as low as 1985. The run size has run from 8,000 fish to 62,000. 1990 was a down year. We use this data to project what the 1991 run size will be.

(Robinson): We concur with the idea that the owners of this report should be the tech team. We haven't talked with the Yurok tribe to establish a commercial fishery. We need input from the tech team by 3-1 or 3-15.

(Barnes): Depends on getting CWT information. So, that's where we are with the spring chinook forecast.

(Masten): I would entertain a motion to assign the tech team to come up with the spring chinook numbers.
(Fullerton): Hearing no objections, the team is assigned this task.

*** Action ***
Tech team to estimate spring chinook numbers in the 1991 run.

Agenda item: Update on threatened/endangered status review

(Barnes): There's publicity of potential listing of Columbia River and California spring chinook stocks. There was a meeting in September in Berkeley, which resulted in a report covering delta smelt through pink and chum salmon. Mike Morford has been involved in this with Peter Moyle, they put together a report from that meeting, a semi-action document.

(Morford): Moyle and I got these people together, attempting to decide how to pursue this issue. This report is for Governor Wilson's consideration. Page 2 begins with a series of recommendations of how we can avoid listing all species in California. We do have fish populations in severe trouble, which need a proactive program to avoid consequences of inaction. Consequences of inaction are occurring on Columbia River and Sacramento River. The report speaks for itself.

Q: What was your conclusion for Klamath R. spring chinook and summer steelhead?

(Morford): We've looked at stocks on statewide basis, the spring chinook, totaled 800-1000 individuals. Of those, less than 200 were Klamath R. fish, indicating we're in trouble. There are small populations of summer steelhead spread around the state, all totalling about 2000 fish. The middle fork Eel has about 250 fish. Small individual populations are in jeopardy.

Q: Could you summarize populations in dire straights in the Klamath R. basin?
(Morford): Spring chinook, summer steelhead, there's only one wild stock remaining in the Salmon and Trinity Rivers. Also the green sturgeon is in trouble.

(Barnes): The USFS has classified the spring chinook salmon as "sensitive". This is only a USFS classification which will provide special measures to prevent the demise.

(Morford): The Trinity R. and the Feather R. hatcheries are the only two hatcheries that propagate this stock. There were no efforts to keep them separate in the past, so these stocks may be hybrid. In the South Fork Trinity River, where there's a remnant run, the stock is subject to outplanting at the TRH. State biologist feel there are fish straying from TRH, which have mingled with those fish still there. This year there were 66 fish, last year only 8. A coincidental rainstorm may have attracted those fish from elsewhere in the Trinity R. system.

Q: These may not be locally adapted distinct stocks. Do there exists separate stocks?
(Morford): Not in the Trinity R., but there are separate stocks in the Sacramento River.

(Higgins): At the Berkeley meeting, the consensus was to avoid listing of all species if possible. The Salmon R. may be the last identifiable stock of spring chinooks in the Klamath R. basin. The run is way down in the last couple of years. If the population were re-expanded, the genetic resource might be protected. This population needs to be avoided in harvest, if possible. Early subsistence harvest in March and April has been shown to impact this stock. This needs to be considered.

(Fullerton): Did the organizations at this meeting adopt this report?
(Morford): Signed off as approving it.

(Fullerton): They're willing to approve this list to put pressure on agencies? I can't believe these organizations said that. If you list a species to protect it it's OK, but not to put pressure on another agency. This is not being a credible scientist.

(Wilkinson): Jerry, how would the USFS approach the issue of biodiversity?
(Barnes): This program is directed to wildlife, but other scientists are jumping on the bandwagon. They hope to look at this under a new perspective of good conservation management. I don't think it would fall under the biodiversity management system. There is a body of scientist saying you should not look at just the fish, but at all the ecosystem and organisms, not just the commercial species.

(Bingham): This whole discussion underlines the importance of the joint consistency meeting's report back to this council, to really identify those discrete self reproducing populations in the basin. We recommend starting with the Task Force plan's list, sit down and thrash out these issues. It's controversial as to what are separate stocks.

(Fullerton): There are certain reasons for listing as well, there is a proper procedure for this.

(Bingham): I'm not suggesting listing these, we want to identify those existing populations....existing now.

(Warrens): Would like to echo Charlie's comment, regarding a paragraph on page 3. It borders on irresponsibility as far as I'm concerned. NMFS staff would be forced to obligate a large amount of time if this occurs. I think this should be avoided by all means possible.

(Fullerton): We should stop these populations from getting to these poor conditions prior to having to be listed.

End of discussion.

Agenda Item: Report on ocean users meeting

(Odemar): We held our 5th annual meeting yesterday, (Lists those present on the panel). I acted as discussion leader, Joe Lesch was there and provided sport catch projections. Also, troll and sport fishery and Yurok tribal representatives were there. The purpose was to develop recommendations for sport harvest for the '91 fishing season, consistent with other harvester's needs. We reviewed the tech team report, and realized that harvest levels needed to be reduced by approximately 50 percent. They were told .17 and .18 harvest level would be used. There was uncertainty indicated of whether the 50% reduction was for total numbers, or harvest rate. I said 50% reduction in harvest rate. McIsaac reported on coho oregon stocks. The OPI and Oregon coastal natural stocks looked slightly better than last year. There might be sufficient fish there to provide input to the KMZ fishery, rather than rely totally on chinook harvest in the KMZ. We went through a process to identify an important goal, which we could recommend to the KFMC. The goals that resulted were:

1) Memorial to Labor day ocean sport fishing season insured
2) Reduce total harvest by 50%
3) All users share in reductions
4) Maintain a 2 fish per day bag limit
5) Minimize changes from last season
6) Maximize the amount of predictability of the season, front loaded, no triggers
7) Continuation of Eel river fishery, tied to a late troll fishery, without it there would not be a recreation fishery
8) Needed to have equity with Oregon coho fishery.

We then listed options, 2 were rejected. Those options which were rejected were a 1 fish per day bag limit and establishment of quotas. The option approved by consensus was as follows:

1) Memorial to Labor day season (with start date of May 29)
2) 2 fish per day bag limit
3) From July 1 through August 15, 1 chinook per day could be taken

Looking at our analysis, adopting this option would have only saved a few hundred fish. A second option did not receive consensus. To achieve the targeted reduction, we discussed instituting a 5-2 fishery in July, with a Monday-Tuesday closure. Joe Lesch and others agreed there's no difference in daily catch rates in the KMZ. We left weekend days alone in order to accommodate local folks fishing on weekends. If analyses show that this doesn't give sufficient savings, without hitting troll fishery, the closures would extend by 1 week increments into June and August. The first cut is to reduce the season from last year, then closing days as the second level of reduction. For the reason we don't know how many fish are out there, the troll fishery isn't' willing to give up much, yet. The inside/outside split will be made in the KFMC. Hopefully, this group can reach consensus on the proper mix once we know what the allowable ocean harvest will be.

Q: This discussion occurred after you discussed the projected stock size?
(Odemar): We knew that we would reduce the harvest rate from .35 to .17 or .18. The other ocean users understood they would may have to dig into their fishery, other zone closures are unknown. This was a framework, by which we did meet consensus on the first tier.

(Wilkinson): The proposal for the '91 recreation fishery season includes a two month reduction from the '90 season. This is a significant reduction, and is front loaded into the season.

(Bingham): We all agreed the first option was the most desirable. From the perspective of the troll fishery, we're going to try to use the Klamath R. fish to access other stocks in the KMZ. We feel all users need to participate in this burden of reduction. We recommend the second option, with the 5-2 closure spread out as far as necessary to achieve the target reduction. From our perspective, the 5-2 would be the least disruptive, but will achieve the reduction.

(Reed): This is a step in the right direction, if you went to a 3-4, would they want 3 days in a row?

(Hayden): We don't accept that at all. We're talking about the sport fishery only. While we agreed that all parties should share in the reduction, the percentage of reduction wasn't specified. In that spirit, we agreed to the first tier. Without seeing what other users are willing to do, it's inappropriate to discuss this. I'm unsatisfied from yesterday's meeting because we only talked about the sport fishery. There's no guarantee to the sport season, therefore the sport fisherman are not willing to guarantee the troll season. We don't want to be squeezed down.

(Reed): A lot of the goals are reasonable. I didn't mean to squeeze. I am in accord with trying to implement those considerations. The tech team would need to assess the difference between the 4-3, successive closure, or other options.

(Warrens): The recreational fishery isn't going to enjoy business as usual. If anyone thinks they're not going to be impacted, you're wrong. This reduction doesn't have to come from other fisheries.

(Wilkinson): I advocate the original proposal be considered, there's a 2 month restriction, coupled with lower stock projections, and potentially less effort. I want the tech team to model that to see how close we come to the 50% targeted reduction.

(Masten): This year is the worst year you've seen in the history of the sport fishery.

(Fullerton): This is just a report on the meeting, we'll talk about this tomorrow.

(Reed): I'd asked that this issue be brought up tonight early, so we could think about this overnight.

(Fullerton): I don't intend to open this issue, it's late.
We can present it tonight, but no extensive discussion.

(Wilkinson): I'd like the stock abundance information others have looked at.

Q: What information do you need tonight, that you haven't seen yet?
(Wilkinson): Yesterday, we looked at a 50% reduction, to design an acceptable option for the fishery which was accepted by consensus.

(Fullerton): I think 50% may be high, the fish just aren't there.

(Odemar): All users may recognize that the 50% rate is unacceptable. More restrictive reductions may have to be instituted. We assumed inside/outside reductions by 50%. The inside harvest is the smaller harvest.

(Bingham): In the past, the troll fishery has underwritten the sport fisheries reduction, and expect to in normal years, but because this year's very low abundance, we ask that all users be reduced proportionately. We all must work together to meet the escapement floor of 35,000.

(Fullerton): Lisle, what information were you suggesting we discuss?

(Reed): All users provide their projected seasons, harvest reductions, etc. what they're looking at for reduction in effort, reduced allocation, etc. I can provide this information for BIA.

(Bingham): We'll be asking for seasonal management in the Fort Bragg area, below Point Arena.

(Fullerton): Then, you're not willing to give the fish to the sport fishery?
(Bingham): Correct. We want to use every fish we can to provide for a viable fishery, so we can survive economically. We're asking for relief from the drought. We want to get at Sacramento R. stocks.

(Wilkinson): We have to optimize our opportunities to fish, but I would ask consideration of special fisheries within the KMZ. It's my feeling we've accommodated the reduction.

(Barnes): The 50% reduction is in harvest rate, not numbers. The abundance is down, so we're looking at an even more reduced harvest.

(McIsaac): In looking at your abundance report, I see more fish than around last year. Am I doing something wrong?
(Barnes): No. There were many more projected last year. Natural escapement is projected at 21,000 natural spawners if the same harvest rates used as last year are modeled this year.

(Reed): The Hoopa and Karuk will do their subsistence and ceremonial needs fishing. The Yurok fishery, promulgated by BIA, will revert back to the 5 year old agreement (Attachment #10). Several of us on the council have conceded to varying from that agreement, because there's some difference in data and practicality. But all is set aside this year, we're back down to a specific case, discussed extensively when that agreement was put together. The criteria used to qualify an emergency situation, these regulations should be implemented in a manner to allow subsistence and ceremonial harvest of 12,000 fish. The Secretary of Interior is willing to go forward with regulations in this manner and will consult with the Secretary of Commerce to decide what to do with the remaining fish. The BIA will meet with other users to make arrangements to consider time sharing on the river.

(Masten): (Reads letter -- Attachment #11) This has been endorsed by the Yurok transition team. We're looking at a disastrous season. Our first priority is to protect escapement, then the KFMC should consider tribal needs as first harvest priority. 1991 stocks will be lowest on record. In years of stock abundance, an ocean harvest rate of .35 and an in-river harvest rate of .52 on 4-5 year olds is allowed. If these rates are allowed this year, the 35,000 escapement floor would be violated. When this occurs, ocean and in-river harvest rates would be reduced proportionately, which would only allow approximately 9,000 fish for in-river subsistence harvest. (Reads item 10 of the agreement) This year can be considered an emergency situation, therefore,

there are only two options which would allow for the "emergency" not "minimum" needs for us. These options are .12 ocean and .31 in-river harvest rates (option 1), and .08 ocean and .34 in-river rates (option 2). Either of these options would meet emergency minimum tribal needs. Low stock abundance in '91 doesn't allow for negotiation. The allowable harvest is based on present ocean stock abundance. If the stock abundance projection goes up, in-river harvest will be increased proportionately. I would like to make this available to all council members.

Q: Your request to enact certain portions of the code, did it clear the lawyers?
(Masten): We've been informed that this authority exists.

(McIsaac): If we stayed with the sharing agreement, and still made the floor, the tribal harvest is 9,000. You indicate 12,000 is the minimal amount agreed to.

(Reed): Clause 10 addresses emergency situations, this is an emergency. Therefore, you opt from the formula, and go to straight in-river subsistence protection.

(Fullerton): Can staff get a copy for everyone for tomorrow?
(Calame): Yes.

Q: Jerry, if you calculated escapement at last year's target rates, what would be the amount of escapement?
(Barnes): 21,000 in-river natural escapement. We actually harvested last year at a higher rate.

(Hayden): If you calculate fish availability, there's about 25,000 fish available, taking the 35,000 floor, 8,000 for hatcheries.

(Reed): The 12,000 is total take for the two tribes, for Hoopa and Yurok harvest. The karuks will get their subsistence needs separately. They aren't a part of the agreement. The Karuk harvest totalled 200 fish last year, probably not much different this year.

2nd Day: 2-15-91
(Odemar substituting for Naylor)

(Fullerton): I've asked Sue to pick up the discussion on the plan.

Re-statement of action items identified 2-14-91:

(Masten): Yesterday, we agreed to provide comment on the Background Information document by 2-22-91 at KRFRO. We are also to provide additional names and address' to receive copies of the plan. KRFRO staff has been provided the language for the option 7.2 footnote. We also discussed scheduling for the public review period. We agreed on the 45 day public comment period to be consistent with the Task Force procedure. We are to review the subcommittee's report, looking for consistency between the two plans. I assume we all reviewed it last night, we'll take comments today. I have no problem with it and I agree with the language as submitted.

Additional comments by council members:

- It's important to have the water policies guide our actions.
- If the Task Force wants to be the implementing entity, it can, but the options could still remain.
- The real action is that the Task Force amend their plan to incorporate this stronger language found in our plan. The Task Force plan has been softened because of constituencies.

- Option 2.6 says the Task Force will determine optimum balance. There's a question of who does what. Our enabling legislation indicated we were to balance between hatchery and wild fish. Who determines balance? And who determines what species we manage for?
- The Task Force plan focus' on hatchery production for mitigation, and only considers propagation for supplementation when natural stocks are not impacted. It was a carefully crafted compromise.
- This section may have been taken out of context. I understand this to regard achieving a balance of harvest on the hatchery and natural stocks. Example, not to target only on hatchery or natural stocks separately.
- The recommendation for Option 3.6. is to re-word Task Force policy.

Motion:
(Bingham): I would recommend to the Council we adopt changes.

(Marshall): These are recommended changes in the plan. Do we adopt this now or after the public comment period?
(Bingham): I suggest we adopt this now, staff can rewrite, then have a more extensive rewrite when public comment is received. The committee didn't try to make change in policy, just assess consistency.

(McIsaac): I'm in favor of adoption, most here is direction to change the Task Force policy. Most changes for our plan is to clean up language.

(Fullerton): Hearing no objection... Adopted.

** Motion carried **

Agenda item: Discussion of 1991 fall chinook harvests
(Attachment #12)

(Fullerton): Jerry, I would like you to explain your capability of analyses for certain scenarios.

(Barnes): We can run harvest rate models, including those that Sue presented yesterday. We can give you various terminal in-river harvest rates, with total ocean harvest rates. We can break down in-river into sport and Indian fishery.

Q: Referring to yesterday's handout, you can produce this today?
There's no column for hatchery production.
(Barnes): Yes, we had that in the model. We can run the model subtracting the hatchery component, essentially .26 of the in-river run.

Q: Then we assume the hatchery component comes out to .26, how accurate?
(Barnes): Long term average...

Q: If we pick an option to provide 35,000 spawner escapement, what is the risk the hatcheries will come up short?
(Barnes): This year we had difficulty predicting that. Relatively different returns to IGH and TRH. 1,300 fish returned to TRH, 7,000 to IGH.

(Odemar): At TRH, we missed egg goal widely. We got 1.5 million eggs. The goal is measured in adults back to the hatchery. The goal also is for 3 million eggs.

(Barnes): A project by PCFFA on the lower river, had lowest return on record.

Q: Did the TRH run short or get eggs from IGH?

(Odemar): We don't trade eggs. I thought it was understood that the 35,000 floor, in most instances, will not meet mitigation goals at either hatchery.

(Barnes): It's assumed that hatchery stocks can "scrape" by on this 35,000 escapement goal.

(Odemar): The egg requirements of the hatcheries can be met without meeting the mitigation goals.

(Barnes): If evenly split between hatcheries, there's about 6,000 fish needed to meet egg take goals. Mitigation goals need about 17,000 fish. I don't know exact numbers.

Q: Regarding your letter Sue, did you infer in your request for the secretary of interior to invoke emergency measures?
(Masten): The letter said we fall below emergency harvest measures as identified in the agreement.

(Fullerton): OK, harvest plan for fall chinook. Yesterday everyone outlined their options for proposed '91 harvest.

(McIsaac): We heard proposals with reductions in the sport fishery. The river sport fishery is higher than ocean sport fishery. Virginia, any options for reduction?
(Bostwick): No. We've had no discussion on this.

Q: How would the sport fishery respond?
(Bostwick): We've been cut back before and survived. If it's necessary, we're negotiable. We've gone from 5 day to no fishery. The other question, the way the CDFG regulations read, we would have no complete closures.

Q: Would you expect that the sport fishery could catch the number projected (in Attachment #12) with escapement being so low this year?
(Bostwick): The total river catch...Yes.

(Odemar): The total in-river sport catch is approximately 10% of the total in-river run every year. Looking at this year's run size and considering 47,000 total spawning escapement (natural + hatchery escapement), plus 12,000 fish in the Indian subsistence fishery, plus the in-river sport fishery of 10% (about 6,000 fish), we need an in-river run of about 65,000 fish, excluding additional closures. To throttle the fishery down, we're looking at severe reductions throughout the system.

(Hayden): The river sport fishery is self regulating. It would be beneficial to let it remain constant, don't want to upset this self regulating balance.

(Bostwick): We would want to know what to expect on the ocean sport fishery.

Q: There's an in-river need totaling 65,000 fish. If the ocean fishery was entirely closed, would we get that many fish back?
(Masten): There would be 17,000 fish available for net harvest, over escapement and hatchery goals, if the ocean is closed.

(Bingham): There are discrepancies between Sue's letter and the tech team numbers, we should use tech team numbers.

(McIsaac): I would like the Tech Team to make that estimate. I get about 65,000 to 70,000 fish, if the ocean is entirely closed.

(Barnes): Joe Polos indicated that this run with a .0 ocean harvest and .4 terminal harvest, natural escapement of 35,000 fish, yields 17,000 for net

harvest, 4,500 to sport harvest, yields 70,000+ fish. The river-mouth run size is 17k+5k+12k+35k=69k plus or minus 2k.

(Fullerton): Theoretically, 70k escapement would result?
(Barnes): Yes. Considering the relative abundance of Klamath R. fish in the KMZ, the impact to the total ocean chinook catch would be 4-5 times the amount.

Q: Looking for a scenario where no fishery occurs in the KMZ, commercial or sport, what areas of the fishery would be open in order to access other stocks such as Sacramento and Rogue River stocks?
(Odemar): This would have to be modeled out. The problem is that, as you squeeze the zone, you provide a sanctuary of free passage, but the fish get caught on the fringe of the zone.

(Barnes): We're not prepared to model that situation (a closure of the KMZ only) at this time. Can't manipulate one of the six cells at this time. That's why we can only model total ocean harvest right now. The predictors for the Rogue and the Sacramento R. stocks are down. The Rogue is about like the Klamath, and the Sacramento stocks are down by 25%.

Q: This implies that near Coos Bay, there would be a higher incidence of Klamath R. stocks?
(Barnes): No. Relative contribution would remain the same as last year.

(Bingham): We're not prepared to start dealing with the in-river fishery. It appears to be a non-negotiable position. The original '86 agreement that we negotiated, made clear that we were all there as equal participants. This position presented yesterday indicates Indian rights are superior and senior. I can't negotiate on those terms. Congress was clear on this principal, that we would negotiate as equals.

(Fullerton): Lisle, the letter Sue read, is this endorsed by the Secretary of Interior? I thought it was a request to the Secretary of Interior.
(Reed): I'm not sure of the status of this request with the Secretary. Also, I did not mean to be dictatorial in this statement. I was trying to provide necessary information for everyone's consideration, that the Secretary of Interior may find it necessary to revert back to the original agreement. Indian subsistence needs were talked about in great detail in the agreement. I didn't think there would be any question on the issue of protecting the Indian harvest. I felt obligated that this body needed to know that this would probably be the accepted needs for the in-river harvest.

(Bingham): The question then is one of quantification. The agreement says in clause #10, "for example" and "12,000 fish" (see Attachment #10). No one from our side of the table felt totally comfortable with that number. We thought when we reached that level, in-river harvest would be negotiated at that time. I don't accept that position as a member of this council.

(Fullerton): Some of the members of that agreement negotiation, wasn't this the spirit of agreement?

(Marshall): Let's stay away from the words "Spirit of agreement". That term is overused.

(Reed): We identified an "emergency situation".

(McIsaac): (Reads from the agreement, section 10, "12,000".) If an emergency exists, discussion will occur. When you indicated that you wanted to revert to this clause, how do you interpret that to read 12k as a minimum amount?
(Reed): This number was used as an example to quantify 12k as minimum number needed for subsistence. 12k was talked about frequently.

(Masten): It wasn't talked about as a minimum need, but as an "emergency situation". This said this level was where we would all bear the burden. I clearly remember that we didn't want to quantify this minimum need. We based it on past poor run years.

(Reed): For four years now, we have varied from this agreement. It's inappropriate that we reduce this fishery as in the past. This time, let's give the tribes a break on reduction.

(Wilkinson): It appears there's nothing we can do. The agreement says we'll enter into negotiation. The tribal letter says we will not negotiate. If we abandon the process, what's the next step? We need to decide this prior to discussion.

(Odemar): My interpretation of the agreement is that paragraph 5 sets up the proportional escapement process. This happens automatically. Paragraph #10 describes what happens in an emergency situation, outside of paragraph 5. I don't see it as setting a standard of minimum needs. I don't see the letter or spirit of the agreement as discussed here.

(Marshall): This council hasn't made a recommendation to PFMC for the past 4 years, it wasn't the tribes that left the table. We're in a critical situation, we've been screaming about this for past 3 years. We all signed this agreement. It's not a spirit. Let's not talk about it in "spirit" terms. The agreement specifically says 18,500 adult for in-river net Indian fishery was identified as a minimum need. 12,000 fish gives the Hoopa Tribe less than half of what we consider our minimum need. We missed out on the big harvest years. Now that we're down to bare bones of the minimum, it's not fair to us to even negotiate this.

(Fullerton): This year adversity is splitting us further apart rather than bringing us closer. We have to protect a resource. It looks like we'll go to PFMC and say we can't agree again.

(Reed): Even if you follow paragraph 5 and say it isn't an emergency, ocean harvest rate of 0.17, leaving Indian in-river fishery at approximately 9,500 fish. It would put them at 2,500 fish short. The harvest options recommended in Sue's letter (see Attachment #11) puts the ocean harvest at .12, which is below the .4 harvest rate experienced in past years. Whether it comes down to .12 or .17 is substantial. You wouldn't envision an ocean harvest rate above .17 this year would you Nat?

(Bingham): The commercial people have minimum fishing needs too, and were made specific promises about what minimum needs would be for us. We were told that we wouldn't have a viable fishery in the KMZ. I'm sorry that there was no mechanism for the Indian fishery to participate in the abundance of the past few years. However, this excess escapement didn't provide for better production in the Klamath R. system. Getting to Lisle's question, a harvest rate of 5 points or a few thousand fish may decide whether there is or is not a fishery at Fort Bragg.

(Pierce): The Tribes interpret Clause #10 to indicate 12,000 fish as a defined number for the tribes, and the discussion that was supposed to occur was to decide how to meet this minimum need, not to discuss how to divide up the low number.

(Marshall): The BIA consider's 12k for minimum subsistence needs for the Hoopa Tribe alone.

(Overberg): I would say that 12k is not what I would call minimum need. Last year and previous years the tribes took almost twice that much. Tribal

membership has not been reduced by 1/2, so their needs are the same as last year's. This 12k is way below minimum needs, in order to make things work, the 12k is bare minimum, not meeting needs.

Q: What if, in a worse situation, there were only 6,000 harvestable fish? What would this do to subsistence?
(Fullerton): I would say the 6,000 would all go to the tribes subsistence.

(Masten): We have taken the position that escapement comes first. Our harvest plan would meet the 35,000 escapement goal.

(After break)

(McIsaac): I propose we allow the tech team to model 3 options, these options should not be too far apart because we don't want to be too low or too high. I suggest that these three options include tribal catch under 12,000. I realize the strong positions put across by the tribes; this is a serious concern, but on the other hand in a dire emergency there are situations when the 12,000 may not be achieved.

(Fullerton): Mel, the March meeting will set up public hearings before the April hearings. If we don't have options before the meeting, will they set up their own meeting?
(Odemar): Correct, the PFMC will draft their own proposals if we do not have one ready.

(Fullerton): If we don't have any recommended options, they will have their own, and theirs don't have to go through a public hearing whereas ours will. If we wait until after March, we will not have our option to the PFMC. We'd have to have another meeting before March. This council has no consensus today which we will need if we are to allow public comment.

(Warrens): We should focus our modeling effort on a range of harvest rates that would be realistic. The council can consider the options prior to the PFMC meeting in March.

(Fullerton): But we were deciding on what options the PFMC provided instead of what we decided.

(Odemar): Following up on what Don said, might we propose a range of harvest rates that might encompass paragraph 5, and paragraph 10? Proportionate decreases in fisheries might accomplish the 12,000 Indian harvest as proposed by the Interior Dept. If the KFMC can accept a harvest rate that falls within this range, this might be acceptable to the PFMC.

(Fullerton): The PFMC will put the harvest rate range out for public review. I hate to see us throw our hands up and not provide them a recommended range for harvest rate.

Q: Can we meet again in San Francisco and see what options might be made available to the public?
(Fullerton): It gets difficult to get the group together, night sessions are not too good.

Q: What all would the model do?
(McIsaac): I see just harvest rate numbers and harvest numbers in the zone closures, restrictions, etc.

Q: Mel, what is your proposal?
(Odemar): We identify a range of harvest rates for sharing ocean and in-river. I do not hope for much beyond that. I think that this group would be more useful if we can agree on basic allocation shares.

(Fullerton): I want to know what impacts outside the zone will be caused by adopting these options.

(Barnes): Within the next 10 days we could run some calibration runs.

(Fullerton): We'd like some options run prior to the March public hearings.

(Barnes): There are various options you could model, e.g. segregate cells, sport harvest. Do you need to be this specific?
(Fullerton): Yes.

(Bingham): For purposes of the Aalmon Advisory Subpanel, it will suffice to have the model calibrated for 1991 abundance, run it as a suggestion, and ask for specific sharing to be looked at. We could develop that range of sharing and not go into seasons or areas. That's best left to the Pacific council.

(Fullerton): Why is that?
(Bingham): Because it involves people who aren't here now.

(Warrens): We need to know the impacts of the 12,000 in-river harvest. We need to assess what the effects outside the zone might be. We may not have enough model data to understand what will happen outside the zone.

(Marshall): Section 10 of the harvest agreement identifies an emergency situation and states that discussions will be conducted to resolve the emergency. Sue has forwarded a resolution to the emergency. This is how we can meet 12,000 to the in-river Indian fishery. We should resolve the emergency, instead we are bouncing back to clause #5. I don't think the Indians are being unreasonable.

(Lisle Reed leaves the meeting, Karole Overberg sits in as his alternate.)

(Masten): We are at a critical year. Our position is to protect the resource. Last year, 31,000 fish escaped into the river, and the Tribes had 7,000 fish. There was a high level of 4 year-old fish harvested in the ocean last year. My people had a difficult time and they did not put fish in cans or on tables, they went without last year. We're not even considering a commercial season. The resource is something they depend upon for survival, not as a surplus commodity. We're trying to be realistic and take into account escapement numbers. This season's harvest is below our minimum need. The Hoopas have already told you that the 12,000 level cuts their needs by a half. We have stuck with the agreement allocation. I was there in 1986 and remember the discussions of identifying 12,000 as an emergency situation. I didn't conceive we would be there so fast, but we are there. We're being fair, we are bearing the burden of conservation.

(Fullerton): In light of Sue's letter, some parts were strong, I don't see the secretary preempting the councils' process.

(Warrens): Right now my concern is for the process. We're preparing to go through the process in the next two months. Before we model options we need to know if the 12,000 in-river harvest is negotiable or fixed.

(Bingham): We are not recommending any amendment to the agreement. We too want to share in the burden of conservation. The commercial industry is having financial problems as a result of last year's season too. I'm very aware and sympathetic to the tremendous pain that the Indian fisheries are committed to take this year.

(Overberg): We will prepare a publication based on the 12,000 in-river harvest. I suggest that this be the bottom range in any models. It was very

difficult for us to come into this council with a resource collapse situation, but when you talk less than 2 fish per member, I believe this is less than what we must provide for tribal trust. Because the numbers are so low, there is a letter from the Secretary of Interior to the Secretary of Commerce to look at the situation.

(Fullerton): The secretary hasn't said anything about the 12,000.

(Wilkinson): I also represent a subsistence needs fishery. Also, if we could join forces on other issues, such as water, we should do so here.

(Fullerton): Where does the council want to go?

[Note: Much of the following discussion of harvest rate options refers to Attachment #12.]

Q: Can we come up with a range other than what Mel presented?
(No answer)

(Fullerton): Do we want to do an analysis on what has been brought forward? Do we want to do this or say the meeting is over?

(Bingham): I'm not willing to accept the .175 rate.

(Odemar): Use rates of .125 to .215 as a range for analyses. These could be applied to meet the intent of paragraphs #5, and #10.

(Masten): I have a real problem with the troller representative not wanting to use the .175 as the bottom range.

(Bingham): I'd like to see our end of the range at .20.

Q: You couldn't go with the last two options?
(Bingham): I'm saying .20.

(Overberg): I assume what we're talking about is to get the team to model. Lets look at it at both ends, we just want to look at it.

(Marshall): I would say do .20, and we want a fifth option, the other ranges.

Q: Why are we modeling side-boards?
(Odemar): These are estimations at this point, it appears that the range should fall between fourth and fifth options (see Attachment #12). They do the modeling at lower end to achieve a proportionate range to meet the escapement floor, the other end to achieve the request of the Dept. of Interior to meet the 12,000 in-river allocation subsistence. The idea here is to achieve: 1) escapement and; 2) harvest allocation. These rates will change before this process is over. I'll put this in the form of a motion.

Motion:
Motion by Odemar to model ocean harvest rate options of .125 to .215.
Motion seconded by Warrens.

(Marshall): The council is refusing to recognize the emergency situation. The proportional reduction needs to be addressed and resolved. Paragraph 10 of the agreement is being ignored by your motion.

(Odemar): My motion would include your concern over meeting your minimum needs, your understanding of the 12,000 fish. We are not trying to say one paragraph takes precedence over another paragraph, but we are trying to accommodate both. My motion is that we ask the technical team to model a

range of ocean and in-river allocation that would be approximate the .125-.215 range.

Additional comments to the motion:

- Modeling for the sideboards will result in something in the middle.
- We need this information to know if there will be a fishery within the KMZ, San Francisco, and north of the KMZ?
- With a 12,000 in-river harvest, it would leave about 4,000 fish at Ft. Bragg.
- Anything below the .21 range will shut down the ocean fisheries. We need to know what are the impacts will be before we decide on the allocation.
- Given the fact the 12,000 is needed by the tribe, why are we asking the tech team to look at options which would provide less than this level?
- We need to tell the team exactly what we want so they don't have to spend a lot of time wondering what to do.

Q: Jerry, do you feel comfortable with this approach?
(Barnes): About the earliest that it would be operative is about February 25. To put it in context, we are doing calculations, the populations in the ocean, for 1990, it comes out very close, with a different split between 3 and 4's. If you had the same design as 1990, for northern Oregon, and southern California, you would come out with a total Klamath impact of 6,400 Klamath fish. I will put it on the board. For age III & IV for 1990, assuming the 1990 and 1991 populations are the same,
Written on the board:

6,500 klamath fish for outside the zone would be taken.
4,200 klamath fish (KMZ sport fishery) within the zone, during same time.

This is based upon the 1990 distribution of fishery and abundance. There is no guarantees that this will be repeated in 1991. In fact, we have very low confidence in being able to predict abundance and distribution.

McIsaac put on board:

Age 3/4

KLAMATH IMPACTS

WITH 1990 REGS
KMZ SPORT = 4,430
NOR AND SOC = 6950

Q: Does the 6,500 include Coos Bay?
(Barnes): No.

(Fullerton): If the PFMC does look at an in-river harvest level less than the 12,000, this might be negotiated between the Secretaries of Interior and Commerce. The Commerce cannot dip into escapement, which would be a violation of, and preempting of the existing harvest agreement.

(Odemar): Regarding option 5, what does a total ocean harvest of 16,000 fish look like out in the ocean? All of these options are putting 47,000 fish in the river as spawners.

Q: The motion is now to model option 4 and 5 (of Attachment #12), is this it? Is that the basic motion? Model 4 and 5?
(Fullerton): Yes. I want to see some of this before we meet again.

(Barnes): If you're going into seasons, we need to do that in advance. We won't be able to do it in a meeting on call. We need it today, if you're looking at specific closures, days on/off, etc.

Q: Looking at a worst case situation, a 2 day closure will result only on a small percentage reduction in the troll?
A: Yes.

(Break)

(Bingham): For purposes of the motion on the floor, we would like to be allowed to troll at an ocean impact level of .20, and make up the subsistence harvest needs from our ocean harvest, up to a level of 16,000 fish. We recognize the need for food.

(Marshall): That is such a major change to the motion, it'll take considerable consideration and discussion. I propose that we vote on the original motion, get it out of the way if need be. This is a political answer to a technical question. If this option is to be broadened to .20, I would suggest it be broadened to a scale of something less than .12 also. We won't set side boards so the bottom 12,000 subsistence needs of our proposal is the maximum number we'll get.

(Bingham): The motion that's on the floor has a range from .19 to .12. Would you speak to where you stand on that motion, absent my amendment?
(Marshall): We think it needs to be expanded on the bottom end, I'm prepared to vote against the motion.

Motion:
(Odemar): If the council wants me to amend my motion to .20 to .10 for modeling, to meet the minimum escapement, as a range of options for modeling purposes, I would suggest this. I don't think it appropriate at this time to discuss how an in-river shortfall might be made up.

(Warrens): I concur with the amended motion, to have this widened option.

(Fullerton): A motion to amend the original motion, any discussion?

(Break for conference)

(Fullerton): We have a motion on the floor. Where do you want to go?

(Overberg): Concerning the amendment to the motion. By broadening the harvest rate options for modeling, I fear we may be attempting to set the ranges. For the modeling effort, we should increase and decrease the harvest rate equally.

(Fullerton): Then .10?

(Marshall): No, .08 is our low option. Right Joe Polos?
(Polos): Yes, but it depends on how you define "equal".

Discussion ensued to broaden limits from the original motion, from .19 - .12 to .20 to .10.

Additional comments by Council members:

- If we broaden it, let's broaden it equally.
- The numerical split is actually to .20 to 11.
- The middle position must assume BIA has already pulled out 12,000 fish. Looking at the middle as .12, we should go down to at least .08.

- Those opposing the motion are stating their "favorite" position.
- This is merely a modeling effort, so we get a better idea of what the numbers mean for ocean fisheries.

Motion amendment:
(Warrens): This is a modeling exercise. I suggest amending the original motion by putting .08 to .20 for modeling purposes.

(Odemar): I agree to amend the original motion.

(Bingham): As a modeling effort I propose .22.

(Fullerton): All in favor of amending the motion?
(Bingham): Oppose.

(Fullerton): Back to the original motion, .19 to .12
** Motion does not carry. **

Motion:
(McIsaac): Motion to model .22 to .08.
(Seconded)

Q: How about .06?
(Odemar): .22 is in the range of the chart (see Attachment #12). .06 is below the range.

Q: When this was modeled out, did you run out to where you were not providing for escapement numbers?
(Polos): The .17 to .125 proportionately reduces harvest to meet the 35,000 escapement goal. Anything above that would reduce the in-river harvesters.

Q: So we would have to adjust harvest or the escapement floor?
(Polos): Yes.

** Motion doesn't carry. Much opposition. **

Motion:
(McIsaac): Motion to model the option of the tribal proposal of .12 to .31.
(Seconded)

** Motion doesn't carry, opposed by Bingham. **

Motion:
(Overberg): I would like to see this council recommend a modeling effort. I would like to allow anyone on the council to put a figure in for modeling consideration. Motion to model any number that anyone requests, so the tech team can have something to model. Otherwise there's no reason for us to meet again on this issue.
(Seconded)

Additional comments to the motion:
- This broadens the options for harvest.
- This makes too many tasks for the tech team to do.
- By refusing to accept the range of models, we do the public a disservice. No one will know what this means for harvest before the PFMC meeting. We must reach decisions for purposes of modeling, or we don't do anyone any good.

Motion:
(Marshall): I withdraw my second to the motion, and make another motion. I make a motion to model options 4, 5 and 6 (see Attachment #12).
(Seconded)

(Bingham): I speak against the motion. I object that .12 is discussed as the midpoint. We'd like to see a 50% reduction. The best I've heard here is the .20 to .10 original motion. It was our move towards a compromise.

(Masten): With the resource being the number one concern, for people to be thinking of a commercial harvest at this level is disappointing to me. This is not caring of the resource or of our subsistence needs. I'd hoped this would have been a meeting to discuss realistic harvest.

Motion:
(McIsaac): We've heard enough of this motion, it will fail. I make a motion not to set parameters, there being no options. (Seconded)
** Motion does not carry. **

Motion:
(McIsaac): I propose a set of criteria for the tech team to analyze, so that no matter what you think is the appropriate harvest rate, you will be able to see the number of fish available. (Writes on board.)

FISHERY:	No. KR FISH	TOTAL FISH
Sport outside KMZ		
KMZ sport (Option 1 yesterday)		
SOR, NCAL Sport		
FT. Bragg/Bay Area 2 weeks July		
FT. Bragg/Coos Bay (same as 1990)		
KMZ Troll fishery (same as 1990)		

(McIsaac): I ask for further suggested fisheries.

(Bingham): I would like to add special area fisheries, i.e. Eel river, Rogue R. fisheries.

(McIsaac): I propose that all troll fisheries be modeled.
I want all predictors, i.e. Rogue and Eel numbers be modeled. With estimates of Klamath R. fish caught. I'm not saying a word of what the in-river, sport fishery would look like. I want to be able to vote intelligently. These seasons would be same as 1990 (dates and areas), using 1991 population estimates.

Additional comments to this motion:
- The Eel and Rogue R. areas are small time/area quotas. I would like to see them listed separately.
- Subsistence levels must be considered in these critically low years.
- This motion gets us off dead center. We are to give the public something to look at. We are not advocating these limitations.
- We need these numbers before the March PFMC meeting. We will ask for these numbers, regardless of what this council does.
- I think we are being stupid by not getting all the information we need.
- We can't vote against getting better information. There are no conditions just by getting this.
- There may be other things needed.
- We're trying to get a handle here on what your original proposal will indicate.
- It won't point out cell by cell what this means to the ocean fisheries. Modeling the 5th option by itself would tell you what that means to ocean fisheries.

(Marshall): We're not willing to take less this year. I'm not clear what Don's motion means. This council has ignored two things. The fact that 12,000 fish in-river is defined as an emergency situation, needing resolve.

The second issue is that Indians don't have an equal right to the fish that the troll industry wants. I'm not prepared for this motion. What's the difference between '90, '88, and '86? The difference here is that our proposal isn't being considered.

** Motion does not carry **

Chairman's prerogative:

(Fullerton): I have an obligation to provide information to the Secretary of Commerce. I ask the tech team to consider ocean harvest rates of .19, .17, .12 and .08, to model what will happen to those fisheries listed in Don's motion. I take the chairman's prerogative.

(Pierce): I assume the public will be given the opportunity to address this process, or express feelings of what they think should be considered in the process even though you have not made a decision.

(Fullerton): I'm not going to cut off public comment, but don't think they would comment on this meeting because we've made no decision.
We have 40 minutes for public comment.

Bill Duncan -- Shelter Cove Commercial Fisherman's Association:
- I've heard you express doubts as to effectiveness of this council. I agree.

Jim Johnson -- Oregon Commercial Salmon Fisherman's Association:
- I came with idea we would share the restrictions together. Oregon is willing to share.
- Fishermen in my fishery are in financial trouble. There's more poverty in the commercial fishery because of financial commitments. There are minimal needs within the commercial fishery also. This group has failed to address those minimum needs. I perceive a minimal fishery.

Leaf Hillman -- Karuk Tribe of California:
(See Attachment #14)

(Fullerton): It is necessary for this council to have information provided. I took the prerogative to provide information to the entire council before the March PFMC meeting. The information is there for everyone to use.

Dave Bitts -- Humboldt Fishermen's Marketing Association:
- I recognize two problems in this meeting. First, you arrived at an impasse to get the tech team to model any options. And the '85 data point of 2 year olds was dropped out. The last time this occurred was a difference of 85,000 excess fish. None of us knows within 100,000 3 year old fish, yet we argue over hundreds of fish. It's any ones guess what's in the ocean.
- I hear what Sue Masten and Lyle Marshall are saying about the 12,000 crisis need. I'm upset that BIA has moved to pre-empt the process, which contradicts the agreement. There is a memo to Ron Iverson saying there is an effort to establish a 12,000 minimum harvest allocation. This is outside the process, so why have this council meet at all.
- The Commercial industry has agreed to supply fish to meet the subsistence needs. The commercial fishermen need the opportunity to fish also. We have proposed to put those fish on your table, by doing so, we have the opportunity to fish. We can both win here. What would the tribal representatives like? To have fish on your table or have us off the ocean?

Richard McCovey -- Chairman of the Yurok Fishers Association:
(See Attachment #14)

Carol Williams -- Representing self:
(See Attachment #14)

Frank Hostler -- Yurok Fishers Association:
(See Attachment #14)

Jeff Hume:
- The Magnuson Act came from the fishermen wanting the fisheries protected, now all we do is decide who will get the fish. In the old days, we said God was angry when the runs would be low.
- We all must sacrifice. There are probably no salmon fisherman that are getting rich. It's going down the drain, they continue to fish because it's their way of life. We talk about equality, there is a difference of how we perceive this. I do commercial fish, the Indian fisherman apparently do not want to make sacrifices.
- Spawning habitat is gone and this fishery may be lost. This council is advisory for the PFMC, this is how we can communicate. We must work out our differences and work together.

(Fullerton): We have failed because we haven't advised the PFMC once.

Vlayn McCovey -- Yurok Fishers Association:
(See Attachment #14)

Phil Kline -- Commercial Fisherman, Eureka:
- It's my opinion that the trawl fishery will catch more fish than any of us. You had better approach that fishery.

Roger Adkins -- United Anglers:
- I'm disgusted with this process. You all jockey numbers around, but haven't addressed the real problems. Prior to '75, each commercial boat harvested about 6400 lbs, average, before the foreign fleets and sea lions. There are other factions involved, the Indians and commercial harvesters are not the entire problem.
- I wrote a document 15 years ago that addressed this issue. Ocean ranching landed over 3 million pounds last year. The foreigners land a considerable amount of fish. You're not managing the fishery, the people are being managed.

Paula Yoon -- Del Norte Fisherman's Marketing Association:
- What's missing is the input into all the government agencies. timber harvest and water users. There must be legislation to protect this habitat.
- Allocation is not the answer, this council should focus on restoration. Make sure all departments are addressed about this problem.

(Hillman): The Task Force's long range planning document is focused on habitat. That's their job, not the council's.

(Yoon): But there's nothing to allocate.

End of public comment period

(Fullerton): Shall we discuss spring chinook?
A: NO.

(Marshall): There is one other issue to discuss. The Klamath R. flow letter to Mr. Hancock (Attachment #13)

(Odemar): Marshall and Reed met to discuss changes to the paragraphs of this letter. (Reads the re-written letter). This letter addresses other legislation concerning the Klamath River restoration program.

Motion:
(Wilkinson): Motion to accept the letter as re-written.
(Seconded)

** Motion carried. **

(Fullerton): I would appoint Keith Wilkinson, Sue Masten and Nat Bingham to review press releases and newsletters.

(Barnes): Concerning your next meeting, the first time the model will be running is 2-27-91. We need to fine tune the options you've directed us to model, I count 72 options so far.

(Fullerton): What about next month's meeting? What about 3-12-91?

(Masten): What about meeting on the 10th, Sunday, prior to the PFMC meeting.

(McIsaac): How about Tuesday night?
A: No.

(Fullerton): Suggestion is the afternoon of the 10th, beginning at noon

Next KFMC Meeting:
3-10-91, noon, at the Clarion hotel at the San Francisco airport area.

(Fullerton): Any other business? Meeting adjourned.

Attachments:

Attachment #1 -	Attendance Roster
Attachment #2 -	Agenda for February 14-15, 1991 meeting
Attachment #3 -	Draft letter from Fullerton to Hancock -- Subject: Klamath River flows
Attachment #4 -	Report -- Subject: Joint subcommittee meeting to assess long-range plans
Attachment #5 -	Re-write of Section 4.1 of the long-range plan.
Attachment #6 -	Schedule of public involvement, Itinerary for KRFRO staff
Attachment #7 -	Letter from Welter to Fullerton -- Subject: Public meeting location change
Attachment #8 -	Letter to KFMC from Paula Yoon (not handed out, but read by Paula Yoon)
Attachment #9 -	Harvest rate model
Attachment #10-	Letter to Ron Iverson -- Subject: BIA position statement
Attachment #11-	Letter to KFMC -- Subject: 1991 Allocation Process Klamath Chinook
Attachment #12-	Table, Variations of ocean and in-river harvest rate combinations
Attachment #13-	Re-write of letter from Fullerton to Hancock -- Subject: Klamath River flows
Attachment #14-	Yurok public comments given at the February 14-15 1991 KFMC meeting held in Eureka at the Rd Lion Inn.
Attachment #15-	Report -- Subject: Karuk Harvest Monitoring project
Attachment #16-	Changes to the Jan 10-11 minutes provided by Mel Odemar.

ATTACHMENT 1

KLAMATH FISHERY MANAGEMENT COUNCIL
Attendance Roster
February 14-15, 1991
Eureka, California

Management Council Members

Nat Bingham	California Commercial Salmon Fishing Industry
Virginia Bostwick	Klamath In-River Sport Fishery
E. C. Fullerton (Chair)	National Marine Fisheries Service
Robert Hayden	California Ocean Sport Fishery
C.L. Marshall	Hoopa Valley Tribal Council
Donald McIsaac	Oregon Department of Fish & Wildlife
Susan Masten (Vice Chair)	Non-Hoopa Indians Residing in Klamath Area
Mel Odemar for A.E. Naylor	California Department of Fish & Game
Lisle Reed	U.S. Department of the Interior
Frank Warrens	Pacific Fishery Management Council
Keith Wilkinson	Oregon Commercial Salmon Fishing Industry

Others Attending

Chuck Abbott
Roger Adkins
Leslie Ammon
Wesley Ammon
Charles Baldwin
J. Barnes
Will Behr
Lisa Bennett
Dave Bitts
Steven C. Brown
Harleigh Calame
Brian C. Cates
Bob Dearth
Richard L. Dixon
W.L. Duncan
Sam Gensaw, Jr
Lloyd O. Gillham
Frank Gist, Sr
John F. Greenville
Rich Haberman
Leaf Hillman
Frank Hostler
Jim Johnson
Bryce Kenny
Leonard Masten
Mudgie McCovey
Richard McCovey

Vlayn McCovey
David McLaughlin
Thelma McLaughlin
Mike Orcutt
Karole Overberg
Doug Parkinson
Dennis Pecaut
Ronnie Pierce
Del Robinson
Mollie Ruud
Gene Schnell
Michael R. Smith
Tom Stewart
Paul Mattz VanMechelen
Carol Williams
David Wills
John Wilson
Paula F. Yoon

ATTACHMENT 2

KLAMATH FISHERY MANAGEMENT COUNCIL
DRAFT AGENDA
EUREKA, CA

February 14, 1991

9:00 Call to order. Review and adoption of agenda and minutes.

9:10 Report on planning activities of the Klamath River Basin Fisheries Task Force (Wilkinson).

9:30 Development of the long-range plan for harvest management.

- o Presentation of the revised draft plan.
- o Council discussion of the revised draft.

10:30 Break

10:45 Reconvene. Update on public involvement and NEPA requirements (Alcorn).

11:00 Public comment.

11:30 Council action on long-range planning.

- o Decision on acceptability of the revised draft.
  - oo Identify changes to be made.
  - oo Assign work.
- o Decision on schedule for public review.

12:30 Lunch

1:30 Reconvene. Report on 1990 harvests.

- o Report on ocean harvest of Klamath chinook (Tech Team).
- o Report on Karuk subsistence harvest (Karuk Tribe representative).
- o Other harvest updates.
- o Council discussion.

2:30 Discussion of 1991 harvests.

- o Projections for fall chinook salmon (Tech Team).
  - oo How allocation affects allowable harvest (Rich Dixon).
  - oo Ocean stock size, and harvestable surplus.
  - oo Allocation options allowable under Amendment 9.
  - oo Update on management tools.
    -Catch per unit of effort, Fort Bragg area.
    -Other.

3:30 Break

3:45 Reconvene. Discussion of 1991 harvests (continued).

- o Projections for spring chinook salmon (Tech Team).
  - oo Update of the 1990 spring chinook report, to include 1990 data.
  - oo Update on threatened/endangered status review.
  - oo Projected ocean harvests.
  - oo Projected inriver run size, hatchery and natural.
  - oo Projected allowable harvest, and recommendations for shaping harvest.
- o Other Tech Team reports.

4:15 o Report on the ocean harvesters' meeting held February 13th.

4:30 o Presentation of 1991 harvest plans, or revisions to those submitted earlier.

5:00 Adjourn

<u>February 15, 1991</u>

8:00 Reconvene. Discussion of 1991 harvests (continued).

- o Fall chinook.
  - oo Tribal harvest plans:
    - Hoopa
    - Karuk
    - Yurok
  - oo Sport harvest plan.
  - oo Ocean troll harvest options.
  - oo KMZ sport harvest plan.
  - oo Negotiation of total harvest rate and allocation.

9:15 Break

9:30 Reconvene. Discussion of 1991 harvests (continued).

- o Spring chinook.
  - oo Tribal harvest plans:
    - Hoopa
    - Karuk
    - Yurok
  - oo Sport harvest plan.
  - oo Ocean harvest of spring chinook.
  - oo Negotiation of total harvest rate and allocation.
- o Other harvest plans.

11:00 Public comment.

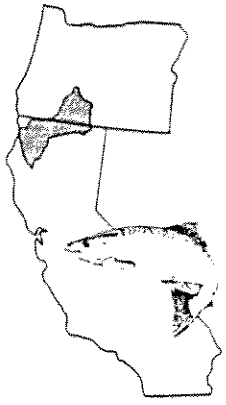
11:30 Council action.

- o Recommendations on harvest management plans.
- o Direction to Technical Advisory Team.
- o Date, location, key agenda items for next meeting.

12:30 Adjourn.

DRAFT

ATTACHMENT 3



Klamath Fishery Management Council

Working to Restore Anadromous Fish in the Klamath River Basin

P.O. Box 1006, Yreka, California 96097

February 7, 1991

California Commercial Salmon Fishing Industry

California Department of Fish and Game

California Offshore Sport Fishery

Hoopa Valley Business Council

Klamath In-River Sport Fishery

National Marine Fisheries Service

Non-Hoopa Indian Representative

Oregon Commercial Salmon Fishing Industry

Oregon Department of Fish and Wildlife

Pacific Fishery Management Council

U.S. Department of the Interior

Mr. Larry Hancock, Regional Director
Mid-Pacific Region
U.S. Bureau of Reclamation
2800 Cottage Way, Room E-2841
Sacramento, California 95825

Dear Mr. Hancock:

On behalf of the Klamath Fishery Management Council, I would like to provide comment regarding the instituted flow variance in the Klamath River, and its impact on the anadromous salmonid fishery.

In response to your request for recommendations concerning outflow manipulation at Klamath Lake and Iron Gate Dam, the California Department of Fish and Game (Department) provided a recommended flow release schedule at Iron Gate Dam (enclosed). We concur with the Department in this recommendation, and strongly encourage spring and fall flows be kept at or above this recommended flow level.

Given the severity of this present drought, we realize that flow reductions are necessary. However, the Bureau apparently has no intention of reducing the irrigation supply provided by the Klamath Project. We believe a reduction in irrigation supply is called for in this situation, and recommend that the Bureau take actions to guarantee water for instream use.

Thank you for this opportunity to comment. If we can assist you in any way, please contact Ron Iverson, Project Leader, at the Klamath River Fishery Resource Office.

Sincerely,

E.C. Fullerton
Chairman

Enclosure

Proposed Klamath River Flow Schedule - 1991
California Department of Fish and Game

Time Period	Instantaneous flow	Amount for time period	Cumulative diff. 700 cfs schedule
February	500 cfs	28,000 acre-ft.	+11,200 acre-ft.
March 1-15	500	15,000	+17,200
March 16-31	800	25,600	+14,000
April	800	48,000	+ 8,000
May	800	49,600	+ 1,800
June 1-15	800	24,000	- 1,200
June 16-30	500	15,000	+ 4,800
July	500	31,000	+17,200
August 1-15	500	15,000	+23,200
August 16-31	800	25,600	+20,000
September	900	54,000	+ 8,000
October	900	55,800	- 4,400
November	900	54,000	-16,400
TOTAL		440,600	-16,400

February 1-November 30 @ 700 cfs = 424,200 acre-ft.

JOINT SUBCOMMITTEE MEETING TO ASSESS CONSISTENCY OF THE KLAMATH RIVER TASK FORCE AND THE KLAMATH FISHERY MANAGEMENT COUNCIL LONG RANGE PLANS

Meeting held February 6-7 in Yreka, CA

Subcommittee members in attendance: Nat Bingham (Chair), Rod McInnis, Mel Odemar, Ronnie Pierce, Jack West, Keith Wilkinson

Purpose:
The joint subcommittee met with the charge by the Klamath Fishery Management Council (KFMC) and the Klamath River Task Force to assess the consistency between recommended policies and objectives of the Task Force's and KFMC's long-range plans. The committee was also charged by both groups, to assess the wording of policy 4.7 (page 4-50) of the Task Force's final long-range plan, and make recommendations to the Task Force.

Provided here, are recommended actions pertaining to the KFMC plan "Options" found to be inconsistent with policies in the Task Force's long-range plan.

We recommend that each KFMC member read these recommendations today, and prepare for discussion tomorrow.

Option 2.6 "Design Harvest regimes to achieve an appropriate balance between available natural and surplus hatchery stocks".

Action:
1. The KFMC should be aware that the Task Force will determine optimum balance between hatchery and natural fish, while minimizing effects on natural stocks, and typically, a slight surplus will occur.

Option 3.6 "Develop a method to immediately identify hatchery fish"

Action: (Editorial)
1. Re-word Task Force policy 4.4.a to read "mark by fin clipping or other method all hatchery steelhead at Iron Gate Hatchery as well as Trinity River Hatchery so that:" (Attachment 1)
2. Advise Task Force of recommended action.

Option 3.7 "Improve harvestability of hatchery fish by altering stocks, release locations, and by fin clipping"

Action:
1. Suggest rewording to "Improve harvestability of hatchery fish using methods consistent with Task Force plan" (Attachments 1 and 2)

Option 3.9 "Institute a coast-wide Genetic Stock Identifier ocean landing sampling program to determine stock composition of ocean-caught landings"

Action:

1. Recommend to the Task Force, that they amend policy 4.4, of their plan, to include item 4.4.e, which would read "Promote genetic stock identification or DNA programs for ocean and river sampling to determine fish stock identification"

Option 4.7 "Produce Newsletters and Flyers"

Action:

1. The KFMC should be advised that this will be taken care of by KRFRO staff, as described in Chapter 8, page 8-7, item 40, of the Task Force plan.
2. Recommend the Task Force amend their plan to include a Policy 6.3, which would address this issue of providing public information services, i.e. producing Newsletters and Flyers, for the KFMC.

Option 5.1 "Manage escapement to produce maximum sustained yield for each Klamath River run while preventing extinction of any Klamath River tributary natural sub-population"

Action:

1. Recommend the KFMC adopt the "native stock group" language, and adopt those stock groups identified in the Task Force plan (Table 4-1, page 4-11).
2. Remove "prevent extinction" language and substitute "protect locally adopted stocks".
3. The Task Force plan, Table 4-1, native stock group list should have technical review by a special scientific sub-committee for re-evaluation before adoption by the Task Force and the KFMC in their respective plans.

Option 5.2 "Develop optimum escapement levels through harvest rate management"

Action:

1. Clarify to the KFMC the "optimum escapement levels" are for fall run chinook salmon.

Option 5.5 "Establish a threshold for natural stock productivity below which the KFMC will re-examine management methods for natural stocks.

Action: (Editorial)

1. Change the words "management method" to "harvest strategies" in all cases within the Option and the descriptive text.

Options 6.1, 6.2, 6.3

6.1 "Require water flows adequate to achieve optimal productivity of the basin"

6.2 "Mandate by law minimum habitat standards"

6.3 "Seek the establishment of law that mandates minimum stream-flow standards"

Action:

1. Recommend that the Task Force amend their plan to include these Options as policy.

Option 6.4 "Manage all ocean activities consistent with Klamath River natural production"

Action: (Editorial)

1. Strike the word "estuarine" in the Option.

Option 8.1 "Production of more fish, i.e. target on surplus hatchery stock to strengthen depleted natural stocks"

Action: (Editorial)

1. Edit the Option to remove the phrase "Production of more fish, i.e.", just have "Target harvest on surplus hatchery stock to strengthen depleted natural stocks."

Option 8.2 "Recommend to the Klamath Fisheries Basin Task Force habitat and/or bio-enhancement measures for basin stocks found by Klamath Fishery Management Council to be weak relative to general basin productivity"

Action:

1. Recommend that both the Task Force and KFMC adopt the stock groups list in the Task Force plan, only after technical review as described in Option 5.1 actions, above.

Policy 4.7 of Task Force Plan

"The Task Force will determine a carrying capacity-based escapement goal for each species and run in each sub-basin, stream reach by stream reach."

Action: (Editorial)

1. Recommend editorial change for Task Force policy 4.7 to read "The Task Force will work towards determining spawning population levels appropriate to achieve optimal smolt production for all self sustaining populations of anadromous salmonids in the basin."

der to stop poaching however, a new level of cooperation with communities and other law enforcement personnel must be reached. As Basin communities become aware of the potential economic benefit of a successful Restoration program, they will take a more proprietary interest in their local fisheries resources.

Policies for Fish Population Protection

Objective 4: Strive to protect the genetic diversity of anadromous fishes in the Klamath River Basin.

4.1 Increases in populations of self-sustaining runs of fish separate in time or space from hatchery stocks, referred to here as "native" populations, will be the basis upon which the success of the Restoration Program will be judged.

4.2. The Task Force will work closely with the Klamath Fisheries Management Council to protect locally-adapted anadromous fish stocks that return to all areas of the Klamath Basin, so that self-sustaining runs can be restored, with emphasis given to priority stocks for recovery.

4.3. The Task Force shall recognize the fish populations adapted to the various areas of the Klamath Basin as stock groups until further study indicates that finer or broader distinctions better serve the Klamath River Basin Fisheries Restoration Program. To this end, the following will be undertaken:

a. fall chinook salmon escapement should continue to be monitored by use of weirs on the Shasta, Scott, and Salmon rivers and on Blue Creek, and an additional monitoring effort begun on a Middle Klamath tributary;
b. native spring chinook populations shall continue to be monitored closely in the Salmon River and in the lower river net harvest;
c. CDFG will be requested to continue to monitor population trends of summer steelhead through direct observation surveys;
d. study feasibility of weir operation later in the season to get more information on coho and steelhead;
e. the Task Force will provide training and supervision for community volunteers interested in conducting spawner surveys to help gather information about native salmon stocks, including coho;
f. ask CDFG to analyze the angler success data currently collected from guides to provide a steelhead catch-per-effort baseline from which to measure the success of the Restoration Program;
g. collect information on green sturgeon harvest
h. get the information suggested in Nicholas and Hankin (1988) with which to better identify stock groups, beginning with chinook salmon and proceeding on to all salmon and steel-

head stock groups;

i. include the fish counting methods suggested by Hankin and Reeves (1988) when habitat typing, in order to have consistent estimates of standing crops of juvenile fish;
j. request NMFS to fund a study of green sturgeon, including its distribution, population structure, and level of harvest of Klamath stocks in other areas, to provide sufficient information so that a management plan for the Klamath green sturgeon can be devised; and
k. create incentives for graduate students and other qualified investigators on cutthroat trout, eulachon, and lamprey of the Klamath Basin.

4.4 The Task Force will work with the California Department of Fish and Game to

a. fin-clip all hatchery steelhead at Iron Gate Hatchery as well as Trinity River Hatchery so that:
   - voluntary selective harvest will be possible,
   - the problem of residualism can be investigated
   - the contributions of hatchery and native steelhead to returns can be determined;
b. mark a consistent fraction of all hatchery chinook salmon to help in the Natural Stocks Assessment study of the native-to-hatchery relationship of Klamath Basin chinook stocks;
c. share information gathered through research in a timely manner to enable adaptive management techniques; and
d. investigate the practicality of closing anadromous fish-producing streams to "trout" fishing.

4.5 To strengthen law enforcement protection of Klamath Basin fish populations, the Task Force will

a. encourage the formation of local citizen "watch groups" to help in the protection and monitoring of remnant fish populations throughout the basin;
b. ask CDFG to seek cooperative agreements with other law enforcement agencies so that sheriffs' deputies, Forest Service and CDF officers, and highway patrolmen may be interested in helping wardens curb poaching.

4.6 The Task Force will encourage local judges to punish poachers to the full extent of the law. Where necessary, particlarly to protect stocks in danger of becoming extinct, increases in penalties for poaching should be sought.

4.7 The Task Force will determine a carrying capacity-based escapement goal for each species and run in each sub-basin, stream reach by stream reach.

4.8 The Task Force will support the ban on the use of large-scale driftnets for fishing on the high seas.

stocks through inbreeding. Small scale programs need to recognize they may be handling threatened stock groups. Policies are being developed by CDFG for the operation of small scale rearing programs. Parallel policies need to be adopted by tribal governments and the BIA. A Task Force technical work group should work with CDFG to make sure that policies provide adequately for the conservation of gene resources. All small scale rearing operations sponsored by the Restoration Program should strictly adhere to such rules, especially as they pertain to brood handling to avoid irretrievable losses of genetic resources. Although facilities involved are temporary, they should be state-of-the-art, and technical assistance should be available to all project operators. The cost-effectiveness of small scale rearing programs can be improved and additional benefits for the program derived by also rearing coho salmon and steelhead.

While some habitat has been lost due to dams, much of the degraded habitat can be restored. Unlike Atlantic salmon restoration on the East Coast, where habitat problems were so serious and long-standing that most native stocks had been lost, the Klamath retains many of its wild strains of salmon and steelhead. As the river and its tributaries are reshaped through natural processes and accelerated by the restoration program, these fish will return to areas of improved habitat once inhabited by their ancestors. The last decade has seen native chinook populations on the northern Oregon coast rise to their highest levels in a century. Nicholas and Hankin (1989) attribute this to natural habitat recovery and the presence of sufficient remaining genetic diversity in local stocks for the populations to rebound. With commitment and creativity, the Klamath River Basin Fisheries Task Force can achieve similar results.

Policies for Fish Population Restoration

Objective 5.A: Iron Gate Hatchery and Trinity River Hatchery should be operated to produce salmon and steelhead to mitigate for the losses of habitat above their dams and, at the same time, strive to reduce impacts on native fish.

5.A.1. The Task Force's Technical Team will work with CDFG to insure that the Basin's large-scale hatcheries operate to mitigate for loss of habitat above dams while limiting their impacts on wild stocks and maintaining the long term viability of hatchery broodstock. In coordination with Trinity River Task Force, the Task Force will

a. determine the optimal levels and composition of hatchery releases that can best achieve mitigation goals while minimizing impacts on native stocks;

b. identify opportunities for enhancement and harvest supplementation using surplus hatchery eggs where it can be assured that there would be no disease transmission, genetic harm, in-river density dependent effects, or adverse harvest impacts to native stocks;
c. encourge the continuation of hatchery practices that will maintain the fitness of hatchery broodstock and decrease undesirable impacts of straying on native fish;
d. conduct a study to determine the resistance of Iron Gate Hatchery steelhead broodstock to Ceratomyxa shasta; and
e. support the CDFG in its effort to secure a water supply filter for Iron Gate Hatchery.

Objective 5.B: Small-scale rearing programs should be temporary measures, primarily for the purpose of accelerating the rebuilding of locally-adapted native salmon and steelhead populations, and operated to maintain the genetic integrity of such populations. Ideally, small-scale rearing programs should be operated in conjunction with habitat restoration projects.

5.B.1 Those parties having management authority over small scale rearing and pond programs in the Klamath River Basin shall, through coordinated planning, formulate independent guidelines, for activities which will avoid negative effects on the genetic characteristics of native stocks. (The relevant parties, in this instance, are the Yurok, Hoopa, and Karuk Tribes and the State of California, acting through the California Department of Fish and Game.)

5.B.2 The guidelines for small-scale facilities will, to the extent possible, be consistent in content. The guidelines will be developed in accordance with the best known biological practices and their development shall be guided by a technical advisory committee, appointed by the Task Force, having expertise in genetics and fish culture. The small-scale facilities guidelines shall consider, but need not be limited to

a. procedures for trapping, rearing, incubating, and transferring fish, and for the control of fish diseases;
b. broodstock management rules that ensure the maintenance of genetic integrity and the diversity of the stocks handled;
c. requirements that an appropriate number of fish produced by small-scale rearing and enhancement programs are marked and coded wire tagged so that ocean migration may be determined and that inbreeding can be avoided;
d. methods by which to determine release strategies for pond reared steelhead from rescue programs in order to minimize residual behavior; and
e. methods to by which to evaluate program success.

5.B.3 The Task Force shall encourage small-scale fish rearing project operators to participate in research to determine

a. habitat quality to assess appropriate stocking levels;
b. early life histories of fish cultured so that appropriate time for release can be determined; and
c. those levels of spawning escapement that represent "full seeding" so the Task Force may determine when populations have recovered sufficiently to close or move a facility.

5.B.4 The Task Force will explore means of improving the cost-effectiveness of those small-scale rearing programs now targeting late-run fall chinook by capturing other species, such as coho and steelhead, where such efforts would contribute to Restoration Program objectives.

5.B.5 The Task Force will explore the need for green sturgeon population restoration measures.

5.B.6 The Task Force will support the continuation of fish rescue efforts in the middle Klamath Basin and the Scott and Shasta rivers as a viable tool for providing additional salmon and steelhead production.

Re-write of Chapter 4, Section 4.1:

4.1 Assessing proposed options to produce a strategy

A group of proposed activities, or options, was identified and categorized into eight separate dimensions. Those dimensions are:

1. Decision Making Process
2. Harvest Management Strategies
3. Resource Assessment and Monitoring
4. Organizational Approach and communication
5. Escapement Policy
6. Habitat
7. Allocation Strategies
8. Enhancement (Fish Production)

Those options deemed acceptable, and approved by the Council, were compiled into the following list, to form a strategy. To produce a successful strategy, (i.e. a strategy that, if followed, will result in meeting the specified goals and objectives) the Council must select or approve options within each category. Failure to achieve a solution or improvement in any one category could mean failure of the Council to carry out its functions and overcome its problems; hence, the importance of specifying how each dimension of the problem will be handled.

The options, as categorized and approved by the Council, retain their original identifying numbers. Brief descriptions of all options, accepted or rejected, appear in Appendix 1. An additional option, item 7.12 is included in this list and Appendix 1, but is waiting approval by the Council.

The Klamath Fishery Management Councils Strategic Plan --

1. Decision Making Process

1.3 Maintain status quo (unanimous) Decision-making process

1.5 Establish a step-wise process for submitting harvest sharing agreement to PFMC for adoption

1.6 Establish a step-wise process for submitting recommendations to other management authorities

2. Harvest Management Strategies

2.2 Coordinated seasonal management by time and area with quotas allowed

2.4 Develop regulations that allow users access to the stocks

2.6 Design harvest regimes to achieve an appropriate balance between available natural and surplus hatchery stocks

3. Resource Assessment and Monitoring

3.1 Devise a monitoring program that enables instantaneous estimation of harvest status of all salmon stocks

3.2 Seek funds for improved in-season data collection

3.4 Determine potential production of each species in the basin

3.6 Develop a method to immediately identify hatchery fish

3.7 Improve harvestability of hatchery fish by altering stocks, release locations, and by fin clipping

3.8 Develop new sorting and harvest methods

3.9 Institute a coast-wide Genetic Stock Identifier ocean landing sampling program to determine stock composition of ocean-caught landings

3.10 Assess and monitor all anadromous species in the Klamath Basin

4a. Organizational Approach

4.2 Maintain status quo organization

4.3 Upon election of the Yurok Interim Council, the title of non-Hoopa representative will be changed to the Yurok representative

4.4 Add seat to the Council for Karuk Representative

4b. Communication

4.7 Produce Newsletters and Flyers

4.8 Vary locations of meetings

4.9 Improve or establish communications with fishery management authorities on the Klamath in order to carry out our legal responsibilities

4.10 Establish a coordination mechanism between the Klamath Fishery Management Council and the Klamath Fisheries Task Force

5. Escapement Policy

5.1 Manage escapement to produce maximum sustained yield for each Klamath River run while preventing extinction of any Klamath River tributary natural sub-population

5.2 Develop optimum escapement levels through harvest rate management

5.3 Manage all ocean and in-river fisheries that impact Klamath River stocks consistent with Klamath River natural production

5.5 Establish a threshold for natural stock productivity below which the KFMC will re-examine management methods for natural stocks

6. Habitat

6.1 Require water flows adequate to achieve optimal productivity of the basin

6.2 Mandate by law minimum habitat standards

6.3 Seek the establishment of law that mandates minimum stream-flow standards

6.4 Manage all ocean activities consistent with Klamath River natural production

6.6 Council to make recommendations to task force and management authorities on habitat issues as they arise

7. Allocation Strategies

7.2 Establish a two-tiered allocation system: 1) Determine minimum needs for each user group; 2) Allocate the remaining harvestable surplus to optimize the social and economic benefits in a fair and equitable manner as determined by the KFMC

7.3 All fishery management authorities will be given equal credence and co-management status by Klamath Fishery Management Council

7.5 Explore the use of Individual Transferable Quotas (ITQ) natural Klamath Fall Chinook Equivalents to Manage all fisheries (ion-river and ocean)

** 7.12 Establish a two-tiered allocation system:

(1) Pursuant to their trust responsibilities to Indian tribes, federal agencies on the KFMC, in coordination with tribal representatives, shall establish the harvest share allocable to tribal reserved fishing rights, based on an understanding of current and developing tribal requirements;

(2) Allocate remaining allocable harvest among remaining user groups to optimize social and economic benefits in a fair and equitable manner as determined by the KFMC.

8. Stock Enhancement

8.1 Production of more fish, i.e. target on surplus hatchery stock to strengthen depleted natural stocks

8.2 Recommend to the Klamath Fisheries Basin Task Force habitat and/or bio-enhancement measures for basin stocks found by Klamath Fishery Management Council to be weak relative to general basin productivity

8.3 Assess the need for and explore methods of expanding production by hatcheries and/or other means of bio-enhancement

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** Presented by the Hoopa Valley Tribal Council, tentative, awaiting KFMC approval.

SCHEDULE

Public Involvement Process
Management Council

note: This entire schedule depends on the MC plan being ready to mail to the public on March 1

I. Announce
   A. The draft plan is available **(15-30 days prior to public meetings)**
      1. February 15: mail Federal Register Notice, specify publication date of March 1, 1991 (Ron will prepare)
      2. February 15: mail Public Notices to newspapers, specify publication date of March 1, 1991 (Ron will prepare)
      3. February 20: mail Press releases and notices to be posted in Post Offices, agencies etc (Tricia will prepare)
   B. Announcements will include information about:
      1. comment period beginning March 1, 1991,
      2. public meetings,
      3. closure of comment period (April 30) (April 15? to standardize with upper basin comment period of 45 days?)

II. Reproduce draft plan, prepare to mail!
   A. Mid to Late February (Harleigh and Myrtle at USFS)

III. Mail draft plan
   A. during the last week of February (Feb 25-Mar 1) (Harleigh) (Tricia will help generate lists)
      1. our list of MC interested parties (215)
      2. PCFFA (3)
      3. tribal offices (3 ea)
      4. Sportfishing clubs (3 ea)
      5. local libraries (3 ea)
      6. involved agencies (3 ea)

   B. COMMENT PERIOD BEGINS MARCH 1, 1991

IV. Public meetings
   A. January/February
      1. reserve rooms (Lila is working on this one)
   B. early March
      1. advertise (Tricia and Harleigh)
      2. notices to local Post Offices to post
   C. prior to March 14
      1. provide information from gold binder (on running public meetings) to chairs (Sue, Nat, Keith, Charlie and Lyle) (Ron and Tricia will prepare, and mail it to chairs prior to meetings)
   D. few days prior to meetings

1. call TV, radio (PSA's), newspapers to remind

E. during public meetings
   1. record public comment (staff will alternate)
   2. assist reporters collecting information (staff will alternate/Tricia

F.

DATE	LOCATION	Location specifics	CHAIR
March 19:	Weaverville		Lyle
March 20:	Yreka		Charlie
March 26:	Coos Bay		Keith
March 27:	Eureka	Red Lion Inn, time:	Sue
March 28:	Ft Bragg		Nat

V. April (15?) 30: **Comment period closes**

VI. Analyze public comment
   A. subcommittees respond?
   B. chunk of time at MC meeting?

VII. Preparation of final plan
   A. final plan will be sent out to public
   B. Charlie's comment re: collecting comments on the final seems incorrect...the final is a decision statement, it does not require another review.

WHITEHOUSE/docs/schd_mc
Jan 25, 1991

TENTATIVE

SCHEDULE

Public Involvement Process

Task Force - Upper Basin Amendment

I. Draft upper basin amendment ready for initial review by TF at Feb 5,6 Mtg

   A. Revisions provided by representatives

II. Revised upper basin amendment presented to the TF at the late April? meeting.

III. If ok'd by TF, then sent out to public for a 45 day review period

   A. Review period will consist of
      1. opportunities for written comment
      2. public meetings are not required, so I suggest not planning for them unless a great need is seen

IV. Comment period closes in mid June

V. Comments will be summarized in July and August

VI. August or September will be another TF mtg to adopt the revised amendment.

WHITEHOUSE/docs/schd_upb
Jan 25, 1991

1-14-91

KMRC.

MR E.C. Fullerton (Charlie)

What are the chances of having at least one KMZC meeting in Brookings/Harbor area so the people in the northern section of the KMZ can participate.—

Also what ele we have for representation on the council or anywhere, that really can be counted on for KMZ Oregon Commercial and sports fishermen? now that Jim Wilkerson has moved to COQUILLE AREA.

I hope you are as concerned as we are about the potential impact on KMZ Salmon stocks from the Pacific whiting fishery, it has shifted South & is over in a hurry not being a J.V. fishery it will be allowed to start on the beach!

The foreign fishery was always cleaner than J.V. Cause the 12 mile difference that much less impact?

1986 shows that if the fish are abundant they are going to get caught

Please let us know whats going on - am sending this info packet to state + fed senators legislators + congress men - recommending - a minimum salmon by catch to discard of 1% in 8 MT of P.W. to P.F.M.C.! Will you?

Jan 14-91

Thanks for your concerns.

Jim S. Welter for Oregon-So Co fish
404 Pacific ave
Brookings Oregon
1-503-469-7044

DEPT. OF COMMERCE - NOAA
RECEIVED
JAN 18 1991
SOUTHWEST REGION
NATL. MARINE FISHERIES SVC.

ATTACHMENT 8

Del Norte Fishermen's Marketing Association

P. O. Box 397
CRESCENT CITY, CALIFORNIA 95531

TO: KFMC
DT: 2/14/91
RE: KFMC Long Term Harvest Management Plan

My name is Paula Fitzgerald Yoon, I am a parttime manager for the DNFMA, longtime member of CFWH, member of a salmon fishing family, and my husband Jeff and I own a small 35' salmon troller out of Eureka, where Jeff has fished for 17 years.

Points:

1. US Govt in its infinite wisdom, at the calling of the general public, put forth the legislation to form the KFMC in order to restore and allocate Salmon of the Klamath/Trinity River Basins.

The KFMC has been trying to accomplish those mandates for a number of years now, to no successful avail. Why? Because the KFMC lacks the ability to restore the stocks.

This Council should send a clear statement back to the general public that the KFMC has become nothing more than a forum from which to slug out allocation battles - because the true problem lies with habitat condition. Habitat condition is a widespread public responsibility, yet we the user groups are paying the price. This message should be clearly heard by the PFMC, OFWS, CDFG, CA State Water Resource Control Board, US Dept.'s of Commerce, Small Business Administration, Interior, Reclamation and the Senate Agriculture, Nutrition and Forestry Committee, Energy and Natural Resources, Indian Affairs Select Committee, Labor and Human Resources, and the corresponding House Committees.

It is not a problem of overharvest, it is a problem of habitat degradation.

2. At the same time, the DNFMA questions the ethical inequity of permitting a situation where the ocean commercial salmon fleet is continually declining in numbers, while the rolls of eligible commercial river salmon fishers increases, and the ocean salmon charter boat industry increases inside the Zone!

3. We cannot deny the inherent problems with the gillnet method of capture. Due to the confined nature of the river system, the likelihood of overharvesting the Klamath Fall Chinook Natural Spawner , the very species of Salmon which all of CA and OR are being managed on must be addressed. In fact, the KRTAT of 11/1/90 report states that the 4 and 5 YO Chinook are fully vulnerable to the terminal fishery, which uses the gillnet method of capture. I know that there is tremendous effort to decrease the impact of capture on that species by timing of the net sets, but in reality, that effort is only a 2nd guess - it is a gamble

dependent upon a combination of ocean and river conditions which may or may not set up as anticipated 6 months in advance! It is a roulette wheel of management.

Again, we suggest marking of Trinity and Iron Gate hatchery fish, with development of a technologically advanced weir capture system within the estuary in order to select and release the KFCNS - the very fish we are ALL being managed on.

Here's the Catch 22; the paradox:

It must be clearly recognized from the ocean commercial viewpoint that any increase in the ocean Klamath contribution rate decreases fishing availability for ocean commercial fishermen, thus closing down further the zone ports, as well as the near zone ports.

For that reason, an unselfish perspective, if you will, from this council would be to specifically encourage increased rebuilding of stocks from other zone river systems - which could decrease the zone Klamath contribution rate, without actually decreasing the amount of salmon returning to the Klamath, and thus have the effect of restoring to the zone ports some of the industry and culture which has been eliminated since the inception of this system of management.

4. Last Spring I took an upper division fisheries management class at HSU, and was lead through the logic of Rickers reproductive models. This class is one of the introductory classes to the infamous population dynamics class - the one that most fisheries students fear, and many don't pass the first time because it is extremely confusing. The Ricker stock-recruitment model incorporates the concept of density dependent and density independent factors into the equations. Population density independent factors, or environmental factors are known to destabilize populations. Please listen: in the case of density dependent factors, or the inherent, genetic compensatory mechanism of a stock to regulate its own stock size in relation to limiting external factors (this is where alpha and beta coefficent logic overlaps, it is known that increased spawners - to a point which is known as the apex of the Ricker curve - increased spawners lead to decreased recruitment. The carrying capacity of the Klamath/Trinity river system is directly related to this genetic tendency precisely at the point (there are other points irrespective of river carrying capacity as well) where superimposed redds as a result of overescapement begin to decrease the stock size.

This logic can partially explain this year's low escapement, which is the resulting year class of the overabundant 1987-88 escapement. Biologists will tell you that ocean conditions may be the predominant factor, yet they also admit that ocean information relative to salmon population estimates represents a big black gapping hole of knowledge. The river is easy to study

- the ocean is a different matter, yet that is exactly where the real time data must come from in order to permit the in-season adjustments which would allow for responsible management. The door to close the season can shut within a matter of hours; the door to open the season upon recognition of inaccurate estimates has yet to open. We must find a way to rectify the inaccurate estimates.

I can't help but wonder how many biologists have taken the time to talk with fishermen about their reading of the upcoming 1991 season based on practical experience.

We appreciate the opportunity for input into this matter, and thank you for your attention.

Ocean Stock Size Estimates and Allowable Harvest Levels for Klamath River Fall Chinook, 1991 Season 1/

by

Klamath River Technical Advisory Team

SUMMARY

Ocean stock size estimates for Klamath River fall chinook salmon are 88,100 and 35,700 ages 3 and 4 fish, respectively. The age 3 projection is 37 percent of the comparative 1990 preseason estimate (239,500). The age 4 projection is 89 percent of the comparative 1990 preseason estimate (40,100). Under the current Pacific Fishery Management Council (PFMC) Framework Plan (Amendment 9) 33 to 34 percent of each cohort is allowed to escape the fisheries to spawn, with the remainder available for harvest. In addition, Amendment 9 requires that 35,000 natural spawners be provided for in all years.

The projections of stock size contained in this report will not support the level of harvest in ocean and river fisheries adopted in recent years, while meeting the objectives of Amendment 9. Ocean and river harvest rates must be reduced to the level that provides 35,000 natural adult spawners, a reduction of approximately 50% in overall harvest compared to 1990.

1/ Prepared February 6, 1991.

TABLE 1. Estimated Number of Fall-run Chinook Salmon by Age Entering the Klamath River During 1981-1990 in Thousands of Fish, Including Estimates of Ocean Population Sizes. a/

RETURN YEAR	INRIVER AGE COMPOSITION					OCEAN HARVEST RATE BY AGE		OCEAN POPULATION BY AGE		
	AGE 2	AGE 3	AGE 4	AGE 5	TOTAL ADULTS	AGE 3	AGE 4	AGE 3	AGE 4	TOTAL
1981	28.1	64.0	14.3	1.8	80.1	0.42	0.66	246.6	45.6	292.2
1982	39.4	30.0	33.9	2.6	66.5	0.60	0.65	346.7	106.7	453.4
1983	3.8	35.8	20.7	0.9	57.5	0.30	0.70	105.5	85.6	191.0
1984	8.3	29.1	15.7	2.4	47.1	0.16	0.43	102.8	30.0	132.8
1985	69.4	30.9	32.5	0.9	64.4	0.27	0.29	140.4	46.0	186.4
1986	44.5	167.3	27.5	TR	194.8	0.33	0.52	604.3	57.4	661.7
1987	19.0	121.4	87.4	TR	208.7	0.38	0.52	415.2	192.4	607.6
1988	24	136.2	53.1	1.4	190.8	0.39	0.45	610.3	108.2	718.5
1989	9.1	14.0	106.5	3.3	123.8	0.24	0.43	117.0	189.4	306.4
1990	4.3	6.4	25.5	0.2	32.1	0.37	0.57	51.1	60.1	111.2

a/ Ocean harvest rate and ocean population size for age 3 fish in 1981 and age 4 fish in 1981 and 1982 from CDFG, 1989; all others after KRTAT, 1990.

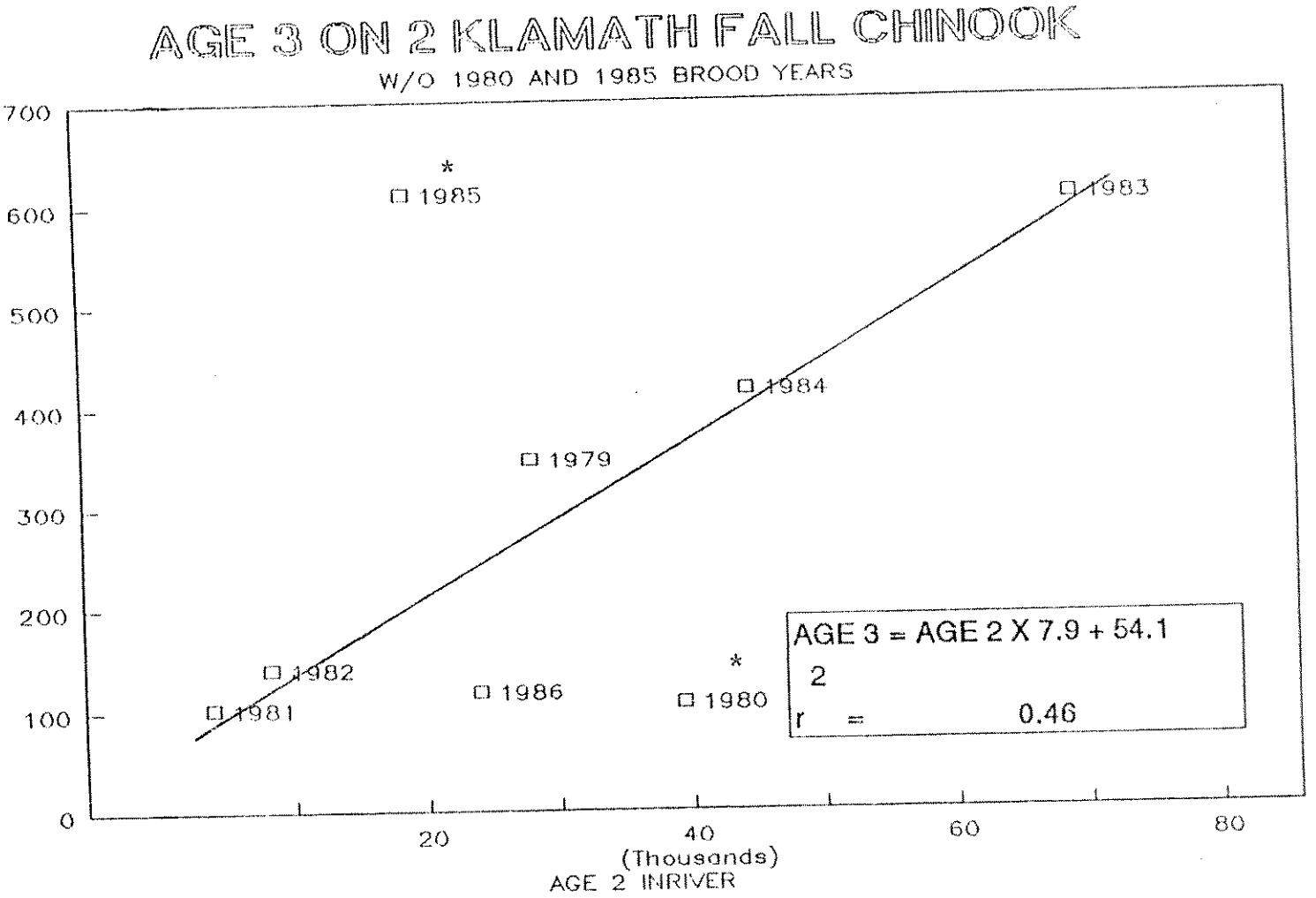


Figure 1. Linear regression of ocean age 3 on inriver age 2 Klamath fall chinook of the same cohort, 1979-1986 broods. *Regression statistics do not include the 1980 or 1985 broods.

now completed), since the cohort is not yet complete. While age 3 stock size has been projected preseason since 1985 using the same methods as decribed above, the accuracy of that projection has been very poor (Appendix A). An alternate method of projecting age 3 ocean abundance is described in Appendix B. This method uses the observed catch-per-unit-of-effort (CPUE) in the Fort Bragg port area in the early part of the commercial season (May and June) to estimate age 3 Klamath stock strength. This method of stock projection could be used to adjust allowable catches of age 3 fish in fisheries that occur after July 1 of any year.

Age 4 Fish

An analysis comparable to that done for age 3 fish was made for age 4 fish, except that 1979-1986 broodyear data were used (1983-1990 ocean abundances) (Table 1). The relation between age 4 ocean abundance estimates and inriver run-size estimates of age 3 fish of the same cohort is shown in Figure 2. The r^2 for this fit is 0.84. An age-4 maturity rate in 1990 of 0.94 (average 1979-1985 maturation probability from cohort reconstruction) was used because the cohort is not yet complete.

Age 5 Fish

The age 5 abundance estimate is based on the age 4 inriver run-size estimate for 1990, an age 4 maturation probability of 0.94 and an estimated overwinter survival rate of 0.80, the values for age 5 fish used in the HRM.

Proportion of Adult Spawners Using Natural Areas

An estimate of the proportion of the adult escapement that will use natural areas in 1991 is critical to determining whether the 35,000 adult escapement floor for the basin will be cleared. To make this projection, the ratio of natural spawning and hatchery adults within the basin from 1978 to 1990 was used (Table 2). This data indicates that 74% of the fish allowed to spawn will do so in natural areas.

STOCK PROJECTIONS AND ALLOWABLE FISHERY LANDING LEVELS

Ocean abundance estimates for Klamath River fall chinook in 1991 are as follows:

Age 2:	873,400 fish
Age 3:	88,100 fish
Age 4:	35,700 fish
Age 5:	1,200 fish

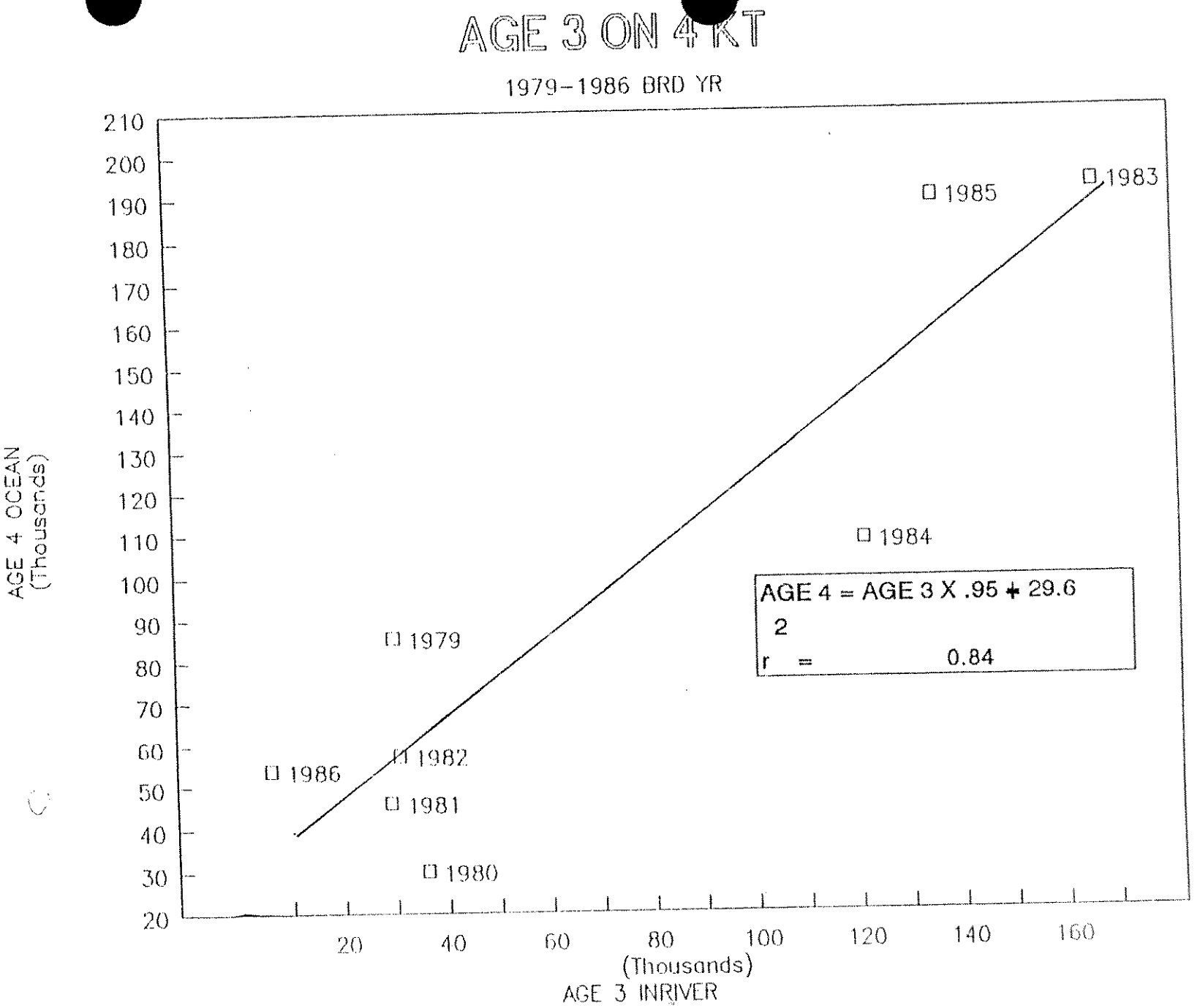


Figure 2. Linear regression of ocean age 4 on inriver age 3 Klamath fall chinook of the same cohort, 1979-1986 broods.

Table 2. Distribution of natural and hatchery adult fall Chinook spawners in the Klamath Basin, 1978–1990.

YEAR	HATCHERY	NATURAL	PERCENT NATURAL
1978	13000	58500	82%
1979	3600	30600	89%
1980	6500	21400	77%
1981	4400	33900	89%
1982	10400	32000	75%
1983	13900	30800	69%
1984	7500	16100	68%
1985	22500	25700	53%
1986	32900	113400	78%
1987	29100	101700	78%
1988	33500	78900	70%
1989	22000	43700	67%
1990	8100	12400	60%
78–90 AVE	16000	46100	74%

Ocean landings of Klamath River fall chinook in 1990 late season (September-November) ocean fisheries totaled 1,400 summer fishery equivalents, including 1,100 age 4 fish and 300 age 5 fish (Table 3). In previous years, these landings have been subtracted from the ocean allocation in the coming year.

REFERENCES

Klamath River Technical Team. 1986. Recommended spawning escapement policy for Klamath River fall-run chinook. Pac. Fish. Mgmt. Council, Portland. 96 p.

Klamath River Technical Advisory Team. 1990. Cohort analysis of Klamath River Basin fall chinook salmon of the 1979 through 1985 broods. January 1990, Rancho Cordova, CA.

TABLE 3. Calculations of September-November, 1990, Ocean Fishery Landings of Klamath River Fall Chinook

Brood year (Age Class)	Number ocean CWT's	Summer equivalent CWT's	Inriver CWT's	Total inriver	BY CWT expansion factor	Ocean landings
87(4)	90	72	425	6,400	15.1	1,087
86(5)	6	5	479	25,500	53.2	266
					Total	1,353

Appendix A. Comparisons of Pre-and Post-season Ocean Abundance Estimates for Ages 3 and 4 Klamath River Fall Chinook, 1985-1990 Seasons

Age	Season	Preseason estimate	Postseason estimate	Pre/post
3	1985	56,500	140,400	0.40
	1986	213,000 a/	604,300	0.35
	1987	255.900	415,200	0.62
	1988	185,400	610,300	0.30
	1989	225,300	117,000 b/	1.93
	1990	239,500	51,100 b/	4.69
			Average	1.38
4	1985	45,500	46,000	0.99
	1986	53,000	57,400	0.92
	1987	164,900	192,400	0.86
	1988	149,100	108,200	1.38
	1989	172,400	189,400	0.91
	1990	40,100	60,000 b/	0.67
			Average	0.96

a/ A 75 percent jack count adjustment was applied because most of the jacks were in the Trinity River. Also, the basin jack count was outside the database.

b/ This is a very preliminary estimate as the cohort has not nearly completed its life cycle.

APPENDIX B

Catch-per-unit-of-effort (CPUE), expressed as commercially landed chinook per day (or chinook per delivery) during May and June, 1981-1990 is positively correlated with Klamath fall chinook age 3 ocean stock size estimates (Figure 1). Why this relationship occurs is difficult to understand, since Klamath fall chinook make up generally only 20 to 30 percent of the total chinook available in the Fort Bragg area during May and June and age 3 Klamath chinook make up even less.

Tables 1 and 2 summarize the CPUE data that is available. Between 1981 and 1990, CPUE (expressed as chinook per day) has varied between about 6 and 22 fish, while Klamath age 3 ocean stock size has varied beteen 51,000 and 610,000.

CPUE data are available in early July, and could be used to adjust harvest of age 3 Klamath chinook in ocean and river fisheries that occur in July, August and September.

TABLE B1

FORT BRAGG PORT AREA CHINOOK CATCH AND EFFORT ESTIMATES – TROLL: 1981–1990.

CHINOOK LANDINGS

YEAR	MAY 1	MAY 2	JUN 1	JUN 2	MAYJUN
1981	4905	17580	26942	4733	54160
1982	10558	14447	14083	5057	44145
1983	1871	6367	14564	7200	30002
1984	1361	3077	187	3392	8017
1985	7633	9602	3333	25762	46330
1986	19928	35456	62621	25731	143736
1987	44153	26089	20475	66056	156773
1988	34885	54474	52708	49162	191229
1989	6232	1095	8354	11062	26743
1990	594	6118	13046	26520	46278

DELIVERIES

YEAR	MAY 1	MAY 2	JUN 1	JUN 2	MAYJUN
1981	361	1373	1397	719	3850
1982	779	1296	865	360	3300
1983	242	433	1067	629	2371
1984	110	177	61	590	938
1985	730	1091	248	1720	3789
1986	424	1694	2091	656	4865
1987	1380	1321	1179	2632	6512
1988	1748	2163	1776	2102	7789
1989	682	85	1443	505	2715
1990	103	662	956	1450	3171

DAYS FISHED

YEAR	MAY 1	MAY 2	JUN 1	JUN 2	MAYJUN
1981	614	2334	1676	863	5487
1982	857	1426	1644	684	4611
1983	315	563	1707	1006	3591
1984	220	354	67	649	1290
1985	1460	2182	298	2064	6004
1986	678	2710	2300	722	6410
1987	1932	1849	1533	3422	8736
1988	2098	2596	2131	2522	9347
1989	818	102	1876	656	3452
1990	150	705	1214	2266	4335

TABLE B2

CATCH PER UNIT OF EFFORT DATA – FORT BRAGG PORT AREA: 1981–1990.

CPUE (DELIVERIES X 1000)

YEAR	MAY 1	MAY 2	JUN 1	JUN 2	MAY12	JUN12	MAYJUN
1981	13.6	12.8	19.3	6.6	13.0	15.0	14.1
1982	13.6	11.1	16.3	14.0	12.1	15.6	13.4
1983	7.7	14.7	13.6	11.4	12.2	12.8	12.7
1984	12.4	17.4	3.1	5.7	15.5	5.5	8.5
1985	10.5	8.8	13.4	15.0	9.5	14.8	12.2
1986	47.0	20.9	29.9	39.2	26.1	32.2	29.5
1987	32.0	19.7	17.4	25.1	26.0	22.7	24.1
1988	20.0	25.2	29.7	23.4	22.8	26.3	24.6
1989	9.1	12.9	5.8	21.9	9.6	10.0	9.9
1990	5.8	9.2	13.6	18.3	8.8	16.4	14.6

CPUE (DAYS FISHED X 1000)

YEAR	MAY 1	MAY 2	JUN 1	JUN 2	MAY12	JUN12	MAYJUN
1981	8.0	7.5	16.1	5.5	7.6	12.5	9.9
1982	12.3	10.1	8.6	7.4	11.0	8.2	9.6
1983	5.9	11.3	8.5	7.2	9.4	8.0	8.4
1984	6.2	8.7	2.8	5.2	7.7	5.0	6.2
1985	5.2	4.4	11.2	12.5	4.7	12.3	7.7
1986	29.4	13.1	27.2	35.6	16.3	29.2	22.4
1987	22.9	14.1	13.4	19.3	18.6	17.5	17.9
1988	16.6	21.0	24.7	19.5	19.0	21.9	20.5
1989	7.6	10.7	4.5	16.9	8.0	7.7	7.7
1990	4.0	8.7	10.7	11.7	7.9	11.4	10.7

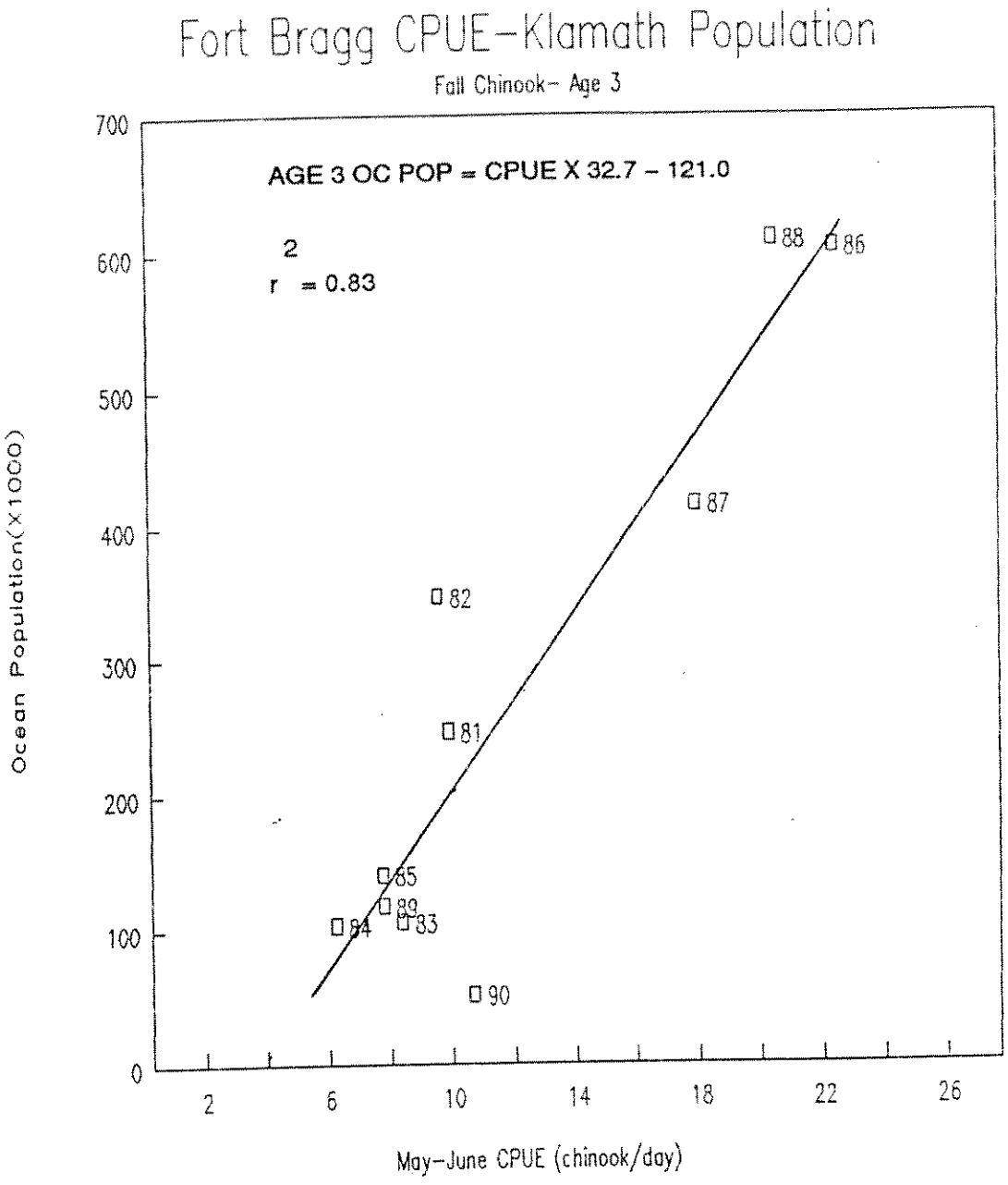


Figure B1. Fort Bragg CPUE and Age 3 Klamath stock size, 1981-1990.

ATTACHMENT 10

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

IN REPLY REFER TO:

Sacramento Area Office
2800 Cottage Way
Sacramento, California 95825

FEB 12 1991

Ron Iverson, Project Leader
Klamath Field Office
U.S. Fish and Wildlife Service
P. O. Box 1006
Yreka, California 96096

RE: Bureau of Indian Affairs Position on the Allocation of Klamath River Fall Chinook Salmon for Indian Purposes in 1991.

Dear Dr. Iverson:

Please provide the following information to the Klamath Fishery Management Council for their use during the February 13-15, 1991 meeting.

Because of the position of the Secretary of the Interior, as stated in his November 30, 1990 letter to Secretary of Commerce Robert A. Mosbacher (copy enclosed), the Bureau of Indian Affairs will be publishing a pre-season adjustment to the existing 25 CFR, Part 250, Indian Fishing. That adjustment will establish a minimum harvest of 12,000 adult fall chinook salmon in 1991 for Indian purposes.

That number is based on the Long-term Harvest Sharing Agreement signed on July 22, 1987, and by application of standard methods. Our biologists examined a number of harvest rate combinations and strategies to determine if satisfactory fisheries could be crafted for all harvest groups and still protect the spawning escapement. It was their finding that a resource emergency exists in 1991 and that it will be virtually impossible to develop appropriate fisheries in 1991 on Klamath River stocks through the application of recent harvest rate formulas.

The original authors of the Agreement anticipated that such an emergency might occur and made provisions to allocate Klamath River salmon in such a situation. Please refer to paragraph 10 of the Klamath River Salmon Management Long-term Harvest Sharing Agreement for details of that provision.

The Bureau of Indian Affairs (Bureau) will re-allocate the Indian allocation of 12,000 adult fall chinook between the Hoopa and the Yurok Indian Reservations. A Harvest Management Plan for the Yurok portion, which will protect the escapement floor, will be prepared by the Bureau. Because of its trust responsibility for the resource, the Bureau will maintain and protect the 35,000 floor as established by the Klamath Fishery Management Council and adopted by the Pacific Fishery Management Council. That action, combined with a total allocation of 12,000 salmon will create a severe hardship for Indian families in 1991.

For additional information or clarification, please contact Delmar Robinson at (916) 245-5141.

Sincerely,

Edward B Wilson

ACTING Area Director

Enclosures

KLAMATH RIVER SALMON MANAGEMENT LONG-TERM HARVEST SHARING AGREEMENT

The KFMC has agreed to the following provisions for sharing the harvest of Klamath River fall chinook salmon. These sharing agreements are based on the rebuilding program previously agreed to which is based on a harvest rate approach (approximately 65 percent per brood) and an annual escapement floor (35,000 natural spawning fall chinook). These agreements are founded on the expectation that all parties will gain by focusing energies on the rebuilding and enhancement of the Klamath River salmon resources.

1. This sharing agreement will apply through the 1991 fishing season. A review of sharing agreements is expected prior to the 1992 fishing season.

2. The ocean harvest share will be based on an annual harvest rate of .325 for fully vulnerable Klamath River fall chinook salmon.

3. The inriver harvest share will be based on an annual harvest rate of .525 for fully vulnerable Klamath River fall chinook salmon.

4. The inriver and ocean users will develop agreements for the allocation of their respective inriver and ocean share.

5. If these harvest rates would result in less than 35,000 naturally spawning fall chinook in any year, the parties agree that each harvest rate (inriver and ocean) will be reduced proportionately such that the inside-outside sharing ratio (without floor constraints) will remain unchanged after catch reductions (lowered to meet the floor).

6. The parties agree that all harvest of Klamath River fall chinook will be taken into account in these sharing agreements, regardless of the harvest location.

7. Both ocean and inriver groups will attempt to maximize the harvest of hatchery chinook, stronger year classes of Klamath River fall chinook, and the harvest of other salmon stocks in the ocean in order to most effectively meet the needs of the fishermen within the allowable shares of Klamath River fall chinook natural spawners.

8. The parties will use the best available scientific data to estimate the anticipated stock size and expected catch composition of Klamath River naturally spawning fall chinook in the various fisheries.

9. The fisheries will be effectively monitored to ensure that the harvest shares are not exceeded such that the spawning escapement or the shares of other parties are detrimentally impacted. A deficit accounting process may be developed by the parties providing incentive to avoid excessive harvest.

10. The parties recognize that occasionally unanticipated emergencies arise. An example of a definite emergency situation would be a year in which the allowable Indian subsistence harvest was projected to be below 12,000 adult fall chinook. If an emergency exists, discussions will be conducted to agree on special harvest or production measures to resolve the emergency, consistent with the Klamath River escapement plan.

11. The parties anticipate annual meetings to evaluate the conduct of past year's fisheries and the development of fishing plans under the guidance of these rebuilding and harvest sharing agreements.

This agreement is not intended, nor shall it be construed, as quantifying or establishing a limitation on the legal entitlement to the fishery by any group that is a party.

Date 7/22/87
Nathaniel S. Bingham

Date 7/22/87
Clifford Lyle Marshall

Date 7-22-87
Virginia R. Bostwick

Date 7/22/87
Richard Schwarz

Date 7/22/87
Robert P. Hayden

Date 7-22-87
J. Gary Smith

Date 7/22/87
Robert C. Fletcher

Date 7-22-87
Keith Wilkinson

Date 7/22/87
James Martin

Date 7/22/87
J. Lisle Reed

Date 7/22/87
Susan H. Masten

FORMULAS USED IN ISSUE 1 CALCULATIONS

$$u = \frac{N_3 m_3 + N_4 m_4 - E}{N_3 m_3 s_3 + N_4 m_4 s_4}$$

Where:

u = harvest rate to achieve 115,000 escapement under Alternative 1.
N = age-specific ocean stock size
m = age-specific maturation probability (0.43 age-3, 0.89 age-4)
s = age-specific fishery selectivity factor (age-3 = 0.75, age-4 = 1.00)
E = inriver run size goal (escapement plus inriver fishery impact)

Note: A six percent drop-off rate assumed for the inriver fisheries.

$$C = N_3 u(s - 0.05) + N_4 u(s)$$

Where:

c = ocean fishery catch allowance
N = age-specific ocean stock size
u = allowable ocean harvest rate (from equation 1)
s = age-specific fishery selectivity factor (the 0.05 adjustment for age-3 fish is for shaker losses)

THE SECRETARY OF THE INTERIOR

WASHINGTON

November 30, 1990

Honorable Robert A. Mosbacher
Secretary of Commerce
Washington, D.C. 20230

Dear Mr. Secretary:

Enclosed for your information is a copy of a September 28, 1990, letter I received from Ms. Susan Masten, Acting Chairperson, Yurok Tribal Transition Team, and accompanying Yurok Transition Team Resolution Number 74 requesting assistance in maintaining a tribal commercial fishery on the Klamath River in northern California.

As you know, offshore and inland fisheries operating on Klamath River salmon stocks are managed through a complex set of rules and regulations. The Klamath River Fishery Management Council (KFMC) established pursuant to the Klamath River Basin Fishery Resources Restoration Act of 1986 provides harvest allocation recommendations to the Pacific Fisheries Management Council (PFMC) which, in turn, recommends harvest management measures to meet the guidelines set forth in the Magnuson Fishery Conservation Management Act of 1976 through regulations promulgated by the National Marine Fisheries Service. Indian fishing on the Yurok and Hoopa Valley Reservations is governed by regulations promulgated by the Bureau of Indian Affairs (BIA), provided, however, that ordinances set forth by the Hoopa Valley Business Council govern fishing by Hoopa Valley tribal members on their reservation to the extent that they comply with overall tribal harvest quotas established by the BIA.

The failure of the 11-member KFMC to reach a consensus concerning the allocation of the 1990 harvest of Klamath River fall chinook salmon between ocean and in-river interests in accordance with their harvest sharing agreement of 1987 shifted the burden of resource allocation to the PFMC. As you may recall, the PFMC recommended a somewhat lower harvest rate for the in-river fisheries and a somewhat higher harvest rate for the offshore fisheries than those previously adopted by the KFMC.

I endorse the harvest sharing agreement signed by all KFMC members providing for an ocean fisheries harvest rate of 0.35, and an in-river fisheries harvest rate of 0.52 on fully vulnerable age 4 and 5 fall chinook salmon, and support an

allocation in 1991 that conforms to the KFMC harvest sharing agreement. I have instructed my representative on the KFMC, Dr. Lisle Reed, to work closely with the Assistant Secretary - Indian Affairs in monitoring allocation-related developments next year, and to provide me with recommendations, as necessary, for addressing any associated potential impacts on the Indian fisheries. A copy of my letter to Dr. Reed is enclosed.

I look forward to working with you in addressing the complex issues involved.

Sincerely,

Manuel Lujan Jr.

Enclosures

ATTACHMENT 11

February 14, 1991

Susan Masten,
KFMC Non-Hoopa Rep.
P.O. Box 91
Klamath, Ca 95548

Klamath Fishery Management Council

Re: 1991 Allocation Process Klamath Chinook

Council Members:

As you are aware, we are faced with what could be a catastrophic season for Klamath River Fall Chinook. Our first priority this year must be to protect the spawning escapement at all costs. Secondly, this Council must change its priorities this year with regard to allocation; with so few fish for harvest, Tribal needs must be given top priority over economics. It is a matter of survival.

Towards that end certain steps have been taken to guarantee minimal Tribal harvests in 1991.

On November 30, 1990, Secretary of Interior Lujan informed Secretary of Commerce Mosbacher that Interior endorsed the harvest sharing agreement signed by the 11 member Klamath Fishery Management Council (KFMC) in 1987. And, stated that Interior supports an allocation in 1991 that conforms to that agreement.

On February 7, 1991 the Technical Team which provides biological data to the KFMC developed the pre-season ocean stock abundance estimates of Klamath River Fall Chinook Salmon for the 1991 season. Preliminary calculations by the Technical Team indicate that stocks available for harvest in 1991 are probably the lowest on record (88,100 age 3, 35,700 age 4, and 1,200 age 5 Klamath Chinook).

The Pacific Fisheries Management Council's (PFMC) current Fishery Management Plan for Klamath River Fall Chinook calls for a natural spawning escapement floor of 35,000 fish.

In years of higher stock abundance, the KFMC harvest sharing agreement provides for an ocean fisheries harvest rate of .35 and an in-river harvest rate of .52 on fully vulnerable age 4 and 5 chinook salmon. Were those rates applied to this year's low stock abundances the mandated escapement floor would be violated, with only 21,200 natural spawners being allowed escapement. (see option 1, table 1, attached)

Under Item 5 of the harvest sharing agreement it is stated that if such an instance occurs, when the agreed upon harvest shares would violate the escapement floor, that ocean and river harvests will be reduced proportionately to meet the escapement floor.

As currently calculated, this proportional reduction in harvest rates would reduce the Klamath River Tribal (Yurok and Hoopa combined) allowable harvest to only 9,600 Fall Chinook Salmon (see option 2).

Tribal harvests from 1986 through 1989 averaged 43,860 fish, in the 1990 season inadequate escapement from ocean fisheries to the River resulted in a Yurok/Hoopa harvest of only 7,800 fish (32 percent of quota) bringing the average harvest, 1986 through 1990, down to 36,647.

Under Item 10 of the harvest sharing agreement it is recognized that if the allowable Indian harvest falls below 12,000 fish, it will be recognized as a "definite emergency situation" needing special measures to resolve the emergency while remaining consistent with escapement.

Under the current emergency situation, there are only two options which would be consistent with the Federal Government's trust responsibility to Tribal fisheries.

> Option 3: Based on calculating the allowable Tribal harvest at 12,200 fish, the recognized emergency allocation which is below established patterns of use (33 percent of average harvest); allowing for a non-Indian harvest of 17,300 and an escapement of 35,100 natural spawners. This scenerio would be obtained with allowable ocean/river harvest rates of .12 /.31.
>
> Option 4: Based on a near 50/50 share of all harvestable salmon above the required escapement. This option would result in an allowable Tribal harvest of 13,800 and a non-Indian harvest of 12,500. This scenerio would be reached with allowable ocean/river harvest rates of .08 /.34.

The Yurok Tribe has consistently met with the terms of the harvest sharing agreement, and just as consistently entered into the record that the Tribal allocation must reach a point of at least 50 percent of the available harvest. Either of the above two options would, under these adverse circumstances, best meet Tribal needs.

Lacking adjudicated quantification of Tribal allocations it is recommended at this time, that the Bureau of Indian Affairs adhere to the suggested harvest target of 12,000 fish for Tribal fisheries.

Low stock abundances expected in 1991 will not allow for negotiation regarding allowable Tribal harvests. The PFMC has, for the past four seasons, placed the economic considerations of non-Indian fisheries above that of Federal Tribal fishing rights and in a manner not consistent with the KFMC agreement nor Indian law has deprived the Tribes of a rightful portion of their harvest.

IT HAS THEREFORE BEEN REQUESTED that the Department of Interior, through the Bureau of Indian Affairs, assert its Trust responsibility and authority under the Code of Federal Regulations 25, by setting and publishing the allowable Tribal harvest prior to the PFMC process and effectively remove the 1991 Tribal harvest needs from negotiation.

Further, public notice on the intent to harvest a specified number of Fall Chinook Salmon under BIA regulations must include disclaimers to protect Tribal interests in the event of unexpected seasonal changes:

The allowable harvest published is based on current pre-season stock abundance predictions, and an escapement rate of 34-35 percent.

Should that ocean stock abundance be reanalyzed upward, ocean/river harvest shares will be increased in a proportional manner reflecting the harvest sharing agreement.

Should the KFMC Technical Team or PFMC Scientific and Statistical Team find sound biological reason to alter the current spawning escapement requirements; the harvest made available will be shared in a proportional manner between ocean and river based on the harvest sharing agreement.

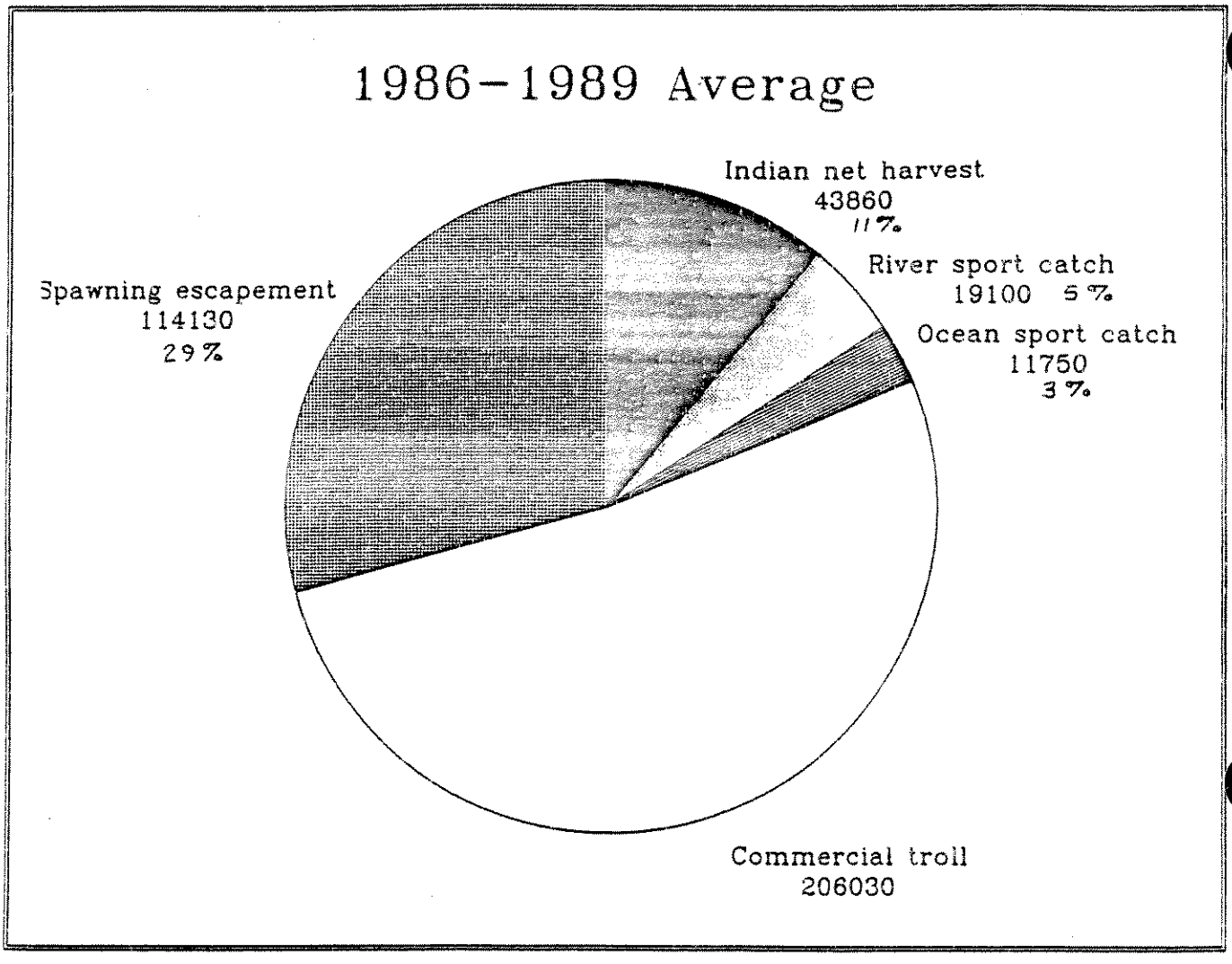
Should any in-season methods be devised which would indicate the availability of increased numbers of harvestable fish i.e. catch per unit of effort, or other, the additional available harvest will be shared proportionaly between ocean and river based on the harvest sharing agreement.

Susan Masten

2/9/91

Table 1. Allowable harvest numbers of Klamath River adult fall chinook.

	Ocean/Inriver Harvest Rates	Ocean Harvest	Yurok Harvest	Hoopa Harvest	Sport Harvest	Natural Escapement
Option 1	0.35 / 0.52	45,300	12,400	3,100	3,900	21,200
Option 2	0.17 / 0.25	21,000	7,700	1,900	1,800	35,700
Option 3	0.12 / 0.31	14,600	9,800	2,400	2,700	35,100
Option 4	0.08 / 0.34	9,200	11,000	2,800	3,300	35,300



Allowable Klamath adult fall chinook harvest in ocean and inriver fisheries with various ocean and inriver harvest rate combinations. (KRTAT Feb. 14, 1991)

Harvest Rate Ocean	/ Inriver	Ocean Harvest	Inriver Sport	Yurok	Hoopa	Total Inriver Harvest	Total Spawning Escpment	Natural Spawning Escpment
0.35	0.52	46800	3900	12400	3100	19400	28600	21200
0.375	0.49	50200	3400	11400	2800	17600	28900	21400
0.17	0.25	22800	1800	7700	1900	11400	48100	35600
0.188	0.245	25200	1700	7400	1900	11000	47500	35100
0.12	0.31	16100	2700	9800	2400	14900	47400	35100
0.08	0.34	10700	3300	11000	2800	17100	47600	35300

* Ocean catch would have to be reduced by 1500 to account for harvest of Klamath fall chinook that occurred in special target fisheries during fall 1990.

HARVEST RATE MODEL DATE RUN 2-15-91 TIME: 7:16

AGE	OSC	%LEGAL	SHAKER MORT	% MATURING	NAT MORT	OCEAN HARV RATE	TERMINAL HARV RATE
2	0.4	0.1	0.26	0.07	0.5	0.375	0.490
3	0.88	0.8	0.26	0.43	0.2	0.375	0.490
4	1	1	0.26	0.89	0.2	0.375	0.490
5	1	1	0.26	1	0.2	0.375	0.490

AGE	STOCK STATUS	POTENTIAL CONTACTS	CONTACTS	OCEAN LANDINGS	RELEASES	SUBSEQUENT DEATHS
2	873400	349360	131010	13101	117909	30656
3	88100	77528	29073	23258	5815	1511
4	35700	35700	13387	13387	0	0
5	1200	1200	450	450	0	0
SUM				50196		32167

1990 FALL OCEAN HARVEST 1500
1990 ALLOWABLE OCEAN HARVEST 48696

AGE	REMAIN POP	ADULT RIVER RUN SIZE	RIVER CONTACT RATE	RIVER IMPACT RATE	RIVER IMPACT	INDIAN HARVEST	SPORT HARVEST
2	829643	58075	0	0	0	0	0
3	63331	27232	0.66	0.3234	8806	6611	1586
4	22313	19858	1	0.49	9730	7305	1753
5	750	750	1	0.49	367	275	66
SUM	916037	47840			18903	14191	3405

1990 ALLOWABLE INRIVER HARVEST 17596

AGE	SPAWN ESCAPE	INRIVER HARVEST
2	58075	0
3	18426	8197
4	10128	9058
5	383	341
SUM	86629	
ADULT	28937	17596

HARVEST RATE:	OCEAN:	0.375
	INRIVER:	0.49
OCEAN HARVEST		50200
INRIVER SPORT		3400
YUROK INDIAN		11400
HOOPA INDIAN		2800
TOTAL INRIVER ADULT HARVEST		17600
TOTAL INRIVER ESCAPEMENT		28900
TOTAL NATURAL ESCAPEMENT		21400

HARVEST RATE MODEL DATE RUN 2-15-91 TIME: 7:15

AGE	OSC	%LEGAL	SHAKER MORT	% MATURING	NAT MORT	OCEAN HARV RATE	TERMINAL HARV RATE
2	0.4	0.1	0.26	0.07	0.5	0.350	0.520
3	0.88	0.8	0.26	0.43	0.2	0.350	0.520
4	1	1	0.26	0.89	0.2	0.350	0.520
5	1	1	0.26	1	0.2	0.350	0.520

AGE	STOCK STATUS	POTENTIAL CONTACTS	CONTACTS	OCEAN LANDINGS	RELEASES	SUBSEQUENT DEATHS
2	873400	349360	122275	12227	110048	28612
3	88100	77528	27134	21707	5427	1411
4	35700	35700	12495	12495	0	0
5	1200	1200	420	420	0	0
SUM				46849		30023

1990 FALL OCEAN HARVEST 1500
1990 ALLOWABLE OCEAN HARVEST 45349

AGE	REMAIN POP	ADULT RIVER RUN SIZE	RIVER CONTACT RATE	RIVER IMPACT RATE	RIVER IMPACT	INDIAN HARVEST	SPORT HARVEST
2	832561	58279	0	0	0	0	0
3	64982	27942	0.66	0.3432	9589	7148	1782
4	23205	20652	1	0.52	10739	8005	1996
5	780	780	1	0.52	405	301	75
SUM	921528	49374			20733	15454	3853

1990 ALLOWABLE INRIVER HARVEST 19307

AGE	SPAWN ESCAPE	INRIVER HARVEST
2	58279	0
3	18353	8930
4	9913	10001
5	375	376
SUM	86545	
ADULT	28641	19307

HARVEST RATE:	OCEAN:	0.35
	INRIVER:	0.52
OCEAN HARVEST		46800
INRIVER SPORT		3900
YUROK INDIAN		12400
HOOPA INDIAN		3100
TOTAL INRIVER ADULT HARVEST		19400
TOTAL INRIVER ESCAPEMENT		28600
TOTAL NATURAL ESCAPEMENT		21200

HARVEST RATE MODEL DATE RUN 2-15-91 TIME: 7:14

AGE	OSC	%LEGAL	SHAKER MORT	% MATURING	NAT MORT	OCEAN HARV RATE	TERMINAL HARV RATE
2	0.4	0.1	0.26	0.07	0.5	0.170	0.250
3	0.88	0.8	0.26	0.43	0.2	0.170	0.250
4	1	1	0.26	0.89	0.2	0.170	0.250
5	1	1	0.26	1	0.2	0.170	0.250

AGE	STOCK STATUS	POTENTIAL CONTACTS	CONTACTS	OCEAN LANDINGS	RELEASES	SUBSEQUENT DEATHS
2	873400	349360	59391	5939	53452	13897
3	88100	77528	13179	10543	2636	685
4	35700	35700	6069	6069	0	0
5	1200	1200	204	204	0	0
SUM				22755		14582

1990 FALL OCEAN HARVEST 1500
1990 ALLOWABLE OCEAN HARVEST 21255

AGE	REMAIN POP	ADULT RIVER RUN SIZE	RIVER CONTACT RATE	RIVER IMPACT RATE	RIVER IMPACT	INDIAN HARVEST	SPORT HARVEST
2	853564	59749	0	0	0	0	0
3	76872	33054	0.66	0.165	5453	4272	792
4	29631	26371	1	0.25	6592	5165	958
5	996	996	1	0.25	249	195	36
SUM	961063	60421			12294	9632	1786

1990 ALLOWABLE INRIVER HARVEST 11418

AGE	SPAWN ESCAPE	INRIVER HARVEST
2	59749	0
3	27601	5064
4	19779	6123
5	747	231
SUM	107129	
ADULT	48127	11418

HARVEST RATE:	OCEAN:	0.17
	INRIVER:	0.25
OCEAN HARVEST		22800
INRIVER SPORT		1800
YUROK INDIAN		7700
HOOPA INDIAN		1900
TOTAL INRIVER ADULT HARVEST		11400
TOTAL INRIVER ESCAPEMENT		48100
TOTAL NATURAL ESCAPEMENT		35600

HARVEST RATE MODEL DATE RUN 2-15-91 TIME: 7:31

AGE	OSC	%LEGAL	SHAKER MORT	% MATURING	NAT MORT	OCEAN HARV RATE	TERMINAL HARV RATE
2	0.4	0.1	0.26	0.07	0.5	0.188	0.245
3	0.88	0.8	0.26	0.43	0.2	0.188	0.245
4	1	1	0.26	0.89	0.2	0.188	0.245
5	1	1	0.26	1	0.2	0.188	0.245

AGE	STOCK STATUS	POTENTIAL CONTACTS	OCEAN CONTACTS	OCEAN LANDINGS	RELEASES	SUBSEQUENT DEATHS
2	873400	349360	65679	6567	59112	15369
3	88100	77528	14575	11660	2915	757
4	35700	35700	6711	6711	0	0
5	1200	1200	225	225	0	0
SUM				25163		16126

1990 FALL OCEAN HARVEST 1500
1990 ALLOWABLE OCEAN HARVEST 23663

AGE	REMAIN POP	ADULT RIVER RUN SIZE	RIVER CONTACT RATE	RIVER IMPACT RATE	RIVER IMPACT	INDIAN HARVEST	SPORT HARVEST
2	851464	59602	0	0	0	0	0
3	75683	32543	0.66	0.1617	5262	4142	743
4	28989	25800	1	0.245	6321	4976	893
5	975	975	1	0.245	238	187	33
SUM	957111	59318			11821	9305	1669

1990 ALLOWABLE INRIVER HARVEST 10974

AGE	SPAWN ESCAPE	INRIVER HARVEST
2	59602	0
3	27281	4885
4	19479	5869
5	737	220
SUM	106362	
ADULT	47497	10974

HARVEST RATE:	OCEAN:	0.188
	INRIVER:	0.245
OCEAN HARVEST		25200
INRIVER SPORT		1700
YUROK INDIAN		7400
HOOPA INDIAN		1900
TOTAL INRIVER ADULT HARVEST		11000
TOTAL INRIVER ESCAPEMENT		47500
TOTAL NATURAL ESCAPEMENT		35100

HARVEST RATE MODEL DATE RUN 2-15-91 TIME: 7:11

AGE	OSC	%LEGAL	SHAKER MORT	% MATURING	NAT MORT	OCEAN HARV RATE	TERMINAL HARV RATE
2	0.4	0.1	0.26	0.07	0.5	0.120	0.310
3	0.88	0.8	0.26	0.43	0.2	0.120	0.310
4	1	1	0.26	0.89	0.2	0.120	0.310
5	1	1	0.26	1	0.2	0.120	0.310

AGE	STOCK STATUS	POTENTIAL CONTACTS	CONTACTS	OCEAN LANDINGS	RELEASES	SUBSEQUENT DEATHS
2	873400	349360	41923	4192	37731	9810
3	88100	77528	9303	7442	1861	483
4	35700	35700	4284	4284	0	0
5	1200	1200	144	144	0	0
SUM				16062		10293

1990 FALL OCEAN HARVEST 1500
1990 ALLOWABLE OCEAN HARVEST 14562

AGE	REMAIN POP	ADULT RIVER RUN SIZE	RIVER CONTACT RATE	RIVER IMPACT RATE	RIVER IMPACT	INDIAN HARVEST	SPORT HARVEST
2	859398	60157	0	0	0	0	0
3	80175	34475	0.66	0.2046	7053	5372	1189
4	31416	27960	1	0.31	8667	6601	1461
5	1056	1056	1	0.31	327	249	55
SUM	972045	63491			16047	12222	2705

1990 ALLOWABLE INRIVER HARVEST 14927

AGE	SPAWN ESCAPE	INRIVER HARVEST
2	60157	0
3	27422	6561
4	19293	8062
5	729	304
SUM	106872	
ADULT	47444	14927

HARVEST RATE:	OCEAN:	0.12
	INRIVER:	0.31
OCEAN HARVEST		16100
INRIVER SPORT		2700
YUROK INDIAN		9800
HOOPA INDIAN		2400
TOTAL INRIVER ADULT HARVEST		14900
TOTAL INRIVER ESCAPEMENT		47400
TOTAL NATURAL ESCAPEMENT		35100

HARVEST RATE MODEL DATE RUN 2-15-91 TIME: 7:10

AGE	OSC	%LEGAL	SHAKER MORT	% MATURING	NAT MORT	OCEAN HARV RATE	TERMINAL HARV RATE
2	0.4	0.1	0.26	0.07	0.5	0.080	0.340
3	0.88	0.8	0.26	0.43	0.2	0.080	0.340
4	1	1	0.26	0.89	0.2	0.080	0.340
5	1	1	0.26	1	0.2	0.080	0.340

AGE	STOCK STATUS	POTENTIAL CONTACTS	CONTACTS	OCEAN LANDINGS	RELEASES	SUBSEQUENT DEATHS
2	873400	349360	27948	2794	25154	6540
3	88100	77528	6202	4961	1241	322
4	35700	35700	2856	2856	0	0
5	1200	1200	96	96	0	0
SUM				10707		6862

1990 FALL OCEAN HARVEST 1500
1990 ALLOWABLE OCEAN HARVEST 9207

AGE	REMAIN POP	ADULT RIVER RUN SIZE	RIVER CONTACT RATE	RIVER IMPACT RATE	RIVER IMPACT	INDIAN HARVEST	SPORT HARVEST
2	864066	60484	0	0	0	0	0
3	82817	35611	0.66	0.2244	7991	6015	1422
4	32844	29231	1	0.34	9938	7481	1769
5	1104	1104	1	0.34	375	282	66
SUM	980831	65946			18304	13778	3257

1990 ALLOWABLE INRIVER HARVEST 17035

AGE	SPAWN ESCAPE	INRIVER HARVEST
2	60484	0
3	27620	7437
4	19293	9250
5	729	348
SUM	107397	
ADULT	47642	17035

HARVEST RATE:	OCEAN:	0.08
	INRIVER:	0.34
OCEAN HARVEST		10700
INRIVER SPORT		3300
YUROK INDIAN		11000
HOOPA INDIAN		2800
TOTAL INRIVER ADULT HARVEST		17100
TOTAL INRIVER ESCAPEMENT		47600
TOTAL NATURAL ESCAPEMENT		35300

Harvest rates based on 5-year sharing agreement.
* Natural adult escapement floor not met.

HARVEST RATE MODEL DATE RUN 2-13-91 TIME: 13:39

AGE	OSC	%LEGAL	SHAKER MORT	% MATURING	NAT MORT	OCEAN HARV RATE	TERMINAL HARV RATE
2	0.4	0.1	0.26	0.07	0.5	0.35	0.52
3	0.88	0.8	0.26	0.43	0.2	0.35	0.52
4	1	1	0.26	0.89	0.2	0.35	0.52
5	1	1	0.26	1	0.2	0.35	0.52

AGE	STOCK STATUS	POTENTIAL CONTACTS	CONTACTS	OCEAN LANDINGS	RELEASES	SUBSEQUENT DEATHS
2	873400	349360	122275	12227	110048	28612
3	88100	77528	27134	21707	5427	1411
4	35700	35700	12495	12495	0	0
5	1200	1200	420	420	0	0
SUM				46849		30023

1990 FALL OCEAN HARVEST 1500
1990 ALLOWABLE OCEAN HARVEST 45349

AGE	REMAIN POP	ADULT RIVER RUN SIZE	RIVER CONTACT RATE	RIVER IMPACT RATE	RIVER IMPACT	INDIAN HARVEST	SPORT HARVEST
2	832561	58279	0	0	0	0	0
3	64982	27942	0.66	0.3432	9589	7148	1782
4	23205	20652	1	0.52	10739	8005	1996
5	780	780	1	0.52	405	301	75
SUM	921528	49374			20733	15454	3853

1990 ALLOWABLE INRIVER HARVEST 19307

AGE	SPAWN ESCAPE	INRIVER HARVEST
2	58279	0
3	18353	8930
4	9913	10001
5	375	376
SUM	86545	
ADULT	28641	19307

HARVEST RATE:	OCEAN:	0.35
	INRIVER:	0.52
OCEAN HARVEST		46800
INRIVER SPORT		3900
YUROK INDIAN		12400
HOOPA INDIAN		3100
TOTAL INRIVER ADULT HARVEST		19400
TOTAL INRIVER ESCAPEMENT		28600
TOTAL NATURAL ESCAPEMENT		21200

Proportional reduction of ocean and inriver harvest rates to reach natural spawning escapement floor.

HARVEST RATE MODEL DATE RUN 2-13-91 TIME: 13:40

AGE	OSC	%LEGAL	SHAKER MORT	% MATURING	NAT MORT	OCEAN HARV RATE	TERMINAL HARV RATE
2	0.4	0.1	0.26	0.07	0.5	0.17	0.25
3	0.88	0.8	0.26	0.43	0.2	0.17	0.25
4	1	1	0.26	0.89	0.2	0.17	0.25
5	1	1	0.26	1	0.2	0.17	0.25

AGE	STOCK STATUS	POTENTIAL CONTACTS	CONTACTS	OCEAN LANDINGS	RELEASES	SUBSEQUENT DEATHS
2	873400	349360	59391	5939	53452	13897
3	88100	77528	13179	10543	2636	685
4	35700	35700	6069	6069	0	0
5	1200	1200	204	204	0	0
SUM				22755		14582

1990 FALL OCEAN HARVEST 1500
1990 ALLOWABLE OCEAN HARVEST 21255

AGE	REMAIN POP	ADULT RIVER RUN SIZE	RIVER CONTACT RATE	RIVER IMPACT RATE	RIVER IMPACT	INDIAN HARVEST	SPORT HARVEST
2	853564	59749	0	0	0	0	0
3	76872	33054	0.66	0.165	5453	4272	792
4	29631	26371	1	0.25	6592	5165	958
5	996	996	1	0.25	249	195	36
SUM	961063	60421			12294	9632	1786

1990 ALLOWABLE INRIVER HARVEST 11418

AGE	SPAWN ESCAPE	INRIVER HARVEST
2	59749	0
3	27601	5064
4	19779	6123
5	747	231
SUM	107129	
ADULT	48127	11418

HARVEST RATE:	OCEAN:	0.17
	INRIVER:	0.25
OCEAN HARVEST		22800
INRIVER SPORT		1800
YUROK INDIAN		7700
HOOPA INDIAN		1900
TOTAL INRIVER ADULT HARVEST		11400
TOTAL INRIVER ESCAPEMENT		48100
TOTAL NATURAL ESCAPEMENT		35600

Allowing 12,000 Indian fishery as well as accomodating the natural escapement floor.

HARVEST RATE MODEL DATE RUN 2-13-91 TIME: 13:38

AGE	OSC	%LEGAL	SHAKER MORT	% MATURING	NAT MORT	OCEAN HARV RATE	TERMINAL HARV RATE
2	0.4	0.1	0.26	0.07	0.5	0.12	0.31
3	0.88	0.8	0.26	0.43	0.2	0.12	0.31
4	1	1	0.26	0.89	0.2	0.12	0.31
5	1	1	0.26	1	0.2	0.12	0.31

AGE	STOCK STATUS	POTENTIAL CONTACTS	CONTACTS	OCEAN LANDINGS	RELEASES	SUBSEQUENT DEATHS
2	873400	349360	41923	4192	37731	9810
3	88100	77528	9303	7442	1861	483
4	35700	35700	4284	4284	0	0
5	1200	1200	144	144	0	0
SUM				16062		10293

1990 FALL OCEAN HARVEST 1500
1990 ALLOWABLE OCEAN HARVEST 14562

AGE	REMAIN POP	ADULT RIVER RUN SIZE	RIVER CONTACT RATE	RIVER IMPACT RATE	RIVER IMPACT	INDIAN HARVEST	SPORT HARVEST
2	859398	60157	0	0	0	0	0
3	80175	34475	0.66	0.2046	7053	5372	1189
4	31416	27960	1	0.31	8667	6601	1461
5	1056	1056	1	0.31	327	249	55
SUM	972045	63491			16047	12222	2705

1990 ALLOWABLE INRIVER HARVEST 14927

AGE	SPAWN ESCAPE	INRIVER HARVEST
2	60157	0
3	27422	6561
4	19293	8062
5	729	304
SUM	106872	
ADULT	47444	14927

HARVEST RATE:	OCEAN:	0.12
	INRIVER:	0.31
OCEAN HARVEST		16100
INRIVER SPORT		2700
YUROK INDIAN		9800
HOOPA INDIAN		2400
TOTAL INRIVER ADULT HARVEST		14900
TOTAL INRIVER ESCAPEMENT		47400
TOTAL NATURAL ESCAPEMENT		35100

Allowing approximately 12,000 Indian fishery as well as accomodating the natural escapement floor.

HARVEST RATE MODEL DATE RUN 2-13-91 TIME: 13:42

AGE	OSC	%LEGAL	SHAKER MORT	% MATURING	NAT MORT	OCEAN HARV RATE	TERMINAL HARV RATE
2	0.4	0.1	0.26	0.07	0.5	0.13	0.30
3	0.88	0.8	0.26	0.43	0.2	0.13	0.30
4	1	1	0.26	0.89	0.2	0.13	0.30
5	1	1	0.26	1	0.2	0.13	0.30

AGE	STOCK STATUS	POTENTIAL CONTACTS	CONTACTS	OCEAN LANDINGS	RELEASES	SUBSEQUENT DEATHS
2	873400	349360	45416	4541	40875	10627
3	88100	77528	10078	8062	2016	524
4	35700	35700	4641	4641	0	0
5	1200	1200	156	156	0	0
SUM				17400		11151

1990 FALL OCEAN HARVEST 1500
1990 ALLOWABLE OCEAN HARVEST 15900

AGE	REMAIN POP	ADULT RIVER RUN SIZE	RIVER CONTACT RATE	RIVER IMPACT RATE	RIVER IMPACT	INDIAN HARVEST	SPORT HARVEST
2	858232	60076	0	0	0	0	0
3	79514	34191	0.66	0.198	6769	5176	1119
4	31059	27642	1	0.3	8292	6341	1370
5	1044	1044	1	0.3	313	239	51
SUM	969849	62877			15374	11756	2540

1990 ALLOWABLE INRIVER HARVEST 14296

AGE	SPAWN ESCAPE	INRIVER HARVEST
2	60076	0
3	27422	6295
4	19350	7711
5	731	290
SUM	106848	
ADULT	47503	14296

HARVEST RATE:	OCEAN:	0.13
	INRIVER:	0.3
OCEAN HARVEST		17400
INRIVER SPORT		2500
YUROK INDIAN		9400
HOOPA INDIAN		2400
TOTAL INRIVER ADULT HARVEST		14300
TOTAL INRIVER ESCAPEMENT		47500
TOTAL NATURAL ESCAPEMENT		35200

Allow 12,000 Indian fishery.

* Managing by thousandths for harvest rate is probably not realistic

HARVEST RATE MODEL DATE RUN 2-13-91 TIME: 13:34

AGE	OSC	%LEGAL	SHAKER MORT	% MATURING	NAT MORT	OCEAN HARV RATE	TERMINAL HARV RATE
2	0.4	0.1	0.26	0.07	0.5	0.128	0.306
3	0.88	0.8	0.26	0.43	0.2	0.128	0.306
4	1	1	0.26	0.89	0.2	0.128	0.306
5	1	1	0.26	1	0.2	0.128	0.306

AGE	STOCK STATUS	POTENTIAL CONTACTS	CONTACTS	OCEAN LANDINGS	RELEASES	SUBSEQUENT DEATHS
2	873400	349360	44718	4471	40247	10464
3	88100	77528	9923	7938	1985	516
4	35700	35700	4569	4569	0	0
5	1200	1200	153	153	0	0
SUM				17131		10980

1990 FALL OCEAN HARVEST 1500
1990 ALLOWABLE OCEAN HARVEST 15631

AGE	REMAIN POP	ADULT RIVER RUN SIZE	RIVER CONTACT RATE	RIVER IMPACT RATE	RIVER IMPACT	INDIAN HARVEST	SPORT HARVEST
2	858465	60092	0	0	0	0	0
3	79646	34247	0.66	0.20196	6916	5278	1155
4	31131	27706	1	0.306	8478	6470	1416
5	1047	1047	1	0.306	320	244	53
SUM	970289	63000			15714	11992	2624

1990 ALLOWABLE INRIVER HARVEST 14616

AGE	SPAWN ESCAPE	INRIVER HARVEST
2	60092	0
3	27331	6433
4	19228	7886
5	727	297
SUM	106651	
ADULT	47286	14616

HARVEST RATE:	OCEAN:	0.128
	INRIVER:	0.306
OCEAN HARVEST		17100
INRIVER SPORT		2600
YUROK INDIAN		9600
HOOPA INDIAN		2400
TOTAL INRIVER ADULT HARVEST		14600
TOTAL INRIVER ESCAPEMENT		47300
TOTAL NATURAL ESCAPEMENT		35000

All allowable harvest occurring inriver

HARVEST RATE MODEL DATE RUN 2-13-91 TIME: 13:37

AGE	OSC	%LEGAL	SHAKER MORT	% MATURING	NAT MORT	OCEAN HARV RATE	TERMINAL HARV RATE
2	0.4	0.1	0.26	0.07	0.5	0.00	0.40
3	0.88	0.8	0.26	0.43	0.2	0.00	0.40
4	1	1	0.26	0.89	0.2	0.00	0.40
5	1	1	0.26	1	0.2	0.00	0.40

AGE	STOCK STATUS	POTENTIAL CONTACTS	OCEAN CONTACTS	OCEAN LANDINGS	RELEASES	SUBSEQUENT DEATHS
2	873400	349360	0	0	0	0
3	88100	77528	0	0	0	0
4	35700	35700	0	0	0	0
5	1200	1200	0	0	0	0
SUM				0		0

1990 FALL OCEAN HARVEST 1500
1990 ALLOWABLE OCEAN HARVEST -1500

AGE	REMAIN POP	ADULT RIVER RUN SIZE	RIVER CONTACT RATE	RIVER IMPACT RATE	RIVER IMPACT	INDIAN HARVEST	SPORT HARVEST
2	873400	61138	0	0	0	0	0
3	88100	37883	0.66	0.264	10001	7396	1921
4	35700	31773	1	0.4	12709	9399	2442
5	1200	1200	1	0.4	480	355	92
SUM	998400	70856			23190	17150	4455

1990 ALLOWABLE INRIVER HARVEST 21605

AGE	SPAWN ESCAPE	INRIVER HARVEST
2	61138	0
3	27882	9317
4	19064	11841
5	720	447
SUM	108084	
ADULT	47666	21605

HARVEST RATE: OCEAN: 0
INRIVER: 0.4

OCEAN HARVEST	0
INRIVER SPORT	4500
YUROK INDIAN	13700
HOOPA INDIAN	3400
TOTAL INRIVER ADULT HARVEST	21600
TOTAL INRIVER ESCAPEMENT	47700
TOTAL NATURAL ESCAPEMENT	35300

Share allowable harvest (50:50) between Indian and non-Indian user groups.

HARVEST RATE MODEL DATE RUN 2-13-91 TIME: 13:37

AGE	OSC	%LEGAL	SHAKER MORT	% MATURING	NAT MORT	OCEAN HARV RATE	TERMINAL HARV RATE
2	0.4	0.1	0.26	0.07	0.5	0.08	0.34
3	0.88	0.8	0.26	0.43	0.2	0.08	0.34
4	1	1	0.26	0.89	0.2	0.08	0.34
5	1	1	0.26	1	0.2	0.08	0.34

AGE	STOCK STATUS	POTENTIAL CONTACTS	CONTACTS	OCEAN LANDINGS	RELEASES	SUBSEQUENT DEATHS
2	873400	349360	27948	2794	25154	6540
3	88100	77528	6202	4961	1241	322
4	35700	35700	2856	2856	0	0
5	1200	1200	96	96	0	0
SUM				10707		6862

1990 FALL OCEAN HARVEST 1500
1990 ALLOWABLE OCEAN HARVEST 9207

AGE	REMAIN POP	ADULT RIVER RUN SIZE	RIVER CONTACT RATE	RIVER IMPACT RATE	RIVER IMPACT	INDIAN HARVEST	SPORT HARVEST
2	864066	60484	0	0	0	0	0
3	82817	35611	0.66	0.2244	7991	6015	1422
4	32844	29231	1	0.34	9938	7481	1769
5	1104	1104	1	0.34	375	282	66
SUM	980831	65946			18304	13778	3257

1990 ALLOWABLE INRIVER HARVEST 17035

AGE	SPAWN ESCAPE	INRIVER HARVEST
2	60484	0
3	27620	7437
4	19293	9250
5	729	348
SUM	107397	
ADULT	47642	17035

HARVEST RATE:	OCEAN:	0.08
	INRIVER:	0.34
OCEAN HARVEST		10700
INRIVER SPORT		3300
YUROK INDIAN		11000
HOOPA INDIAN		2800
TOTAL INRIVER ADULT HARVEST		17100
TOTAL INRIVER ESCAPEMENT		47600
TOTAL NATURAL ESCAPEMENT		35300

Share allowable harvest (50:50) between inriver and ocean user groups.

HARVEST RATE MODEL DATE RUN 2-13-91 TIME: 13:43

AGE	OSC	%LEGAL	SHAKER MORT	% MATURING	NAT MORT	OCEAN HARV RATE	TERMINAL HARV RATE
2	0.4	0.1	0.26	0.07	0.5	0.11	0.31
3	0.88	0.8	0.26	0.43	0.2	0.11	0.31
4	1	1	0.26	0.89	0.2	0.11	0.31
5	1	1	0.26	1	0.2	0.11	0.31

AGE	STOCK STATUS	POTENTIAL CONTACTS	CONTACTS	OCEAN LANDINGS	RELEASES	SUBSEQUENT DEATHS
2	873400	349360	38429	3842	34587	8992
3	88100	77528	8528	6822	1706	443
4	35700	35700	3927	3927	0	0
5	1200	1200	132	132	0	0
SUM				14723		9435

1990 FALL OCEAN HARVEST 1500
1990 ALLOWABLE OCEAN HARVEST 13223

AGE	REMAIN POP	ADULT RIVER RUN SIZE	RIVER CONTACT RATE	RIVER IMPACT RATE	RIVER IMPACT	INDIAN HARVEST	SPORT HARVEST
2	860566	60239	0	0	0	0	0
3	80835	34759	0.66	0.2046	7111	5411	1204
4	31773	28277	1	0.31	8765	6669	1484
5	1068	1068	1	0.31	331	251	56
SUM	974242	64104			16207	12331	2744

1990 ALLOWABLE INRIVER HARVEST 15075

AGE	SPAWN ESCAPE	INRIVER HARVEST
2	60239	0
3	27648	6615
4	19512	8153
5	737	307
SUM	107399	
ADULT	47897	15075

HARVEST RATE: OCEAN: 0.11
INRIVER: 0.31

OCEAN HARVEST 14700

INRIVER SPORT 2700
YUROK INDIAN 9900
HOOPA INDIAN 2500
TOTAL INRIVER ADULT HARVEST 15100

TOTAL INRIVER ESCAPEMENT 47900
TOTAL NATURAL ESCAPEMENT 35400

ATTACHMENT 13

Klamath Fishery Management Council

Working to Restore Anadromous Fish in the Klamath River Basin

P.O. Box 1006, Yreka, California 96097

March 6, 1991

Mr. Larry Hancock, Regional Director
Mid-Pacific Region
U.S. Bureau of Reclamation
2800 Cottage Way, Room E-2841
Sacramento, CA 95825

Dear Mr. Hancock:

On behalf of the Klamath Fishery Management Council, I would like to provide comment regarding the instituted flow variance in the Klamath River, and its impact on the anadromous salmonid fishery.

In response to your request for recommendations concerning outflow manipulations at Klamath Lake and Iron Gate Dam, the California Department of Fish and Game, with concurrence by the U.S. Fish and Wildlife Service and the Oregon Department of Fish and Wildlife, provided an alternative flow release schedule at Iron Gate Dam that would better meet the needs of the basin's anadromous fishery resources while protecting upper basin fisheries. While we support the alternative flow release schedule over the constant release of 700 cfs at the Iron Gate Dam proposed by the Bureau of Reclamation, we do not believe that it will provide adequate flows for the maintenance of the basin's anadromous fishery resources.

Recent Federal actions argue strongly for providing adequate flow releases to protect and restore the basin's anadromous fisheries. We believe that the inclusion of the Klamath River below Iron Gate Dam in the National Wild and Scenic River System, the Klamath River Basin Restoration Act (P.L. 99-552), and the Federal trust responsibility for protecting the vital Indian fisheries in the lower basin, require that anadromous fishery values be given higher priority than presently given by the Bureau when allocating the basin's water resources.

Given the severity of this present drought, we realize that flow reductions are necessary. However, in recognition of the Federal mandates to protect the basin's anadromous fishery values, we strongly recommend that the Bureau examine all management directions available and not reduce flows below Iron Gate Dam disproportionate to other users.

Larry Hancock

March 6, 1991

Thank you for this opportunity to comment. If we can assist you in any way, please contact Ron Iverson, Project Leader, at the Klamath River Fishery Resource Office.

Sincerely,

E C Fullerton

E. C. Fullerton
Chairman

ATTACHMENT 14

These are the yurok public comments given at the February 14, 15, 1991 KFMC meeting held in Eureka at the Red Lion Inn.

2-14-91 KFMC PUBLIC COMMENTS YUROK FISHERS ASSOCIATION

Leslie Ammon Y.F.A. Member

I've been listening about the rivers, I've lived up Southfork all my life. When I was a kid you could go up there and get a salmon anytime you wanted it. They weren't wasted. When my grandfolks were there, they put the head on their shoulders and the tail dragged the ground. That is what kind of fish you caught.
The Southfork now, you have no fish at all. There hasn't been any money put in it and the Klamath its had a few dams way up it, but it hasn't had any new dams in it for years. And its all your feeder creeks, where you used to be able to go in there and ask the game wa4den to spear the fish right there in that little creek, you can't do it anymore because there isn't any fish there.
The Southfork has never had a dime put in it out of the restoration money yet. I think it puts more water into the Trinity than the Trinity does where it meets it.

2-14-91 KFMC PUBLIC COMMENT

Vlayn McCovey President Resighini Rancheria
Y.F.A. Advisor

I'd just like to say that there are allot of areas in which the Indians and Non-Indians should be able to be in complete accord, that has to do with the environmental issues, the timber practices, the water quality, the water levels, the protection and enhancement of the habitat.
On these issues we should be able to stand shoulder to shoulder, hand in hand, Be able to resolve these concerns to the benefit of all concerned, including the fish.
Because we as Indian people have a great concern for the fish. We are related, we feed them.
I think that it would behoove to seriously take into consideration the inherent and inalienable right of the Indian people. And to realize we are extremely tired of being on the short end of the stick!

Carol Williams Yurok Tribal Member

I'm very concerned that the council is talking about alllot of language on the ong term plan. I feel uncomfortable that we don't have our attorneys here and it sounds like we are going to be stuck again, and god knows what is going to happen down the line. It just doesn't seem right that the decision that are being made are the language that, I just don't think that is right to do that.
The other comment that I would like to make is that about the water. It's like I don't feel like the council or the restoration task force team is doing enough about the water. I think everyone feels that way. There is allot more that could be done. I feel that the public needs to be advised as to what is going on. And that people could be asked to get involved. Have hearings and get people fired up about the issue. Now is a good time. I think the valleys are going to feel a real appreciation for the water in this area up here. I think now is a good time to talk about what is happening up here. I didn't allot of talk about what is going on up here. They've got big lawyers down there talking for them. And allot of lobby money for their benefit.
We already have two dry rivers and now the Klamath is going to go dry. Everything looks like the governments, between the $impsons' lobbying and the growers lobbying. We are going to make some big effort on our own behalf. I don't think there is any secret about how we are going to go about doing it. Its just a matter about doing it. Is the council going to do that? Or is it just going to let it go? Are they just going to sit by and let it happen? Who's in charge? Who's got the power? If you don't have the power, then we need to get the power somehow. We can't just idly sit by and let it happen.
If the Indians have tribal rights then help them. Get the money together to get the lawyers there. Let's do something we are in a dire straits, I can see that. Its been a systematic thing to use the Indians to lose that river. Its been a systematic thing happening for years and years and years. Little by little by using all the people concerned we are in the state that we are in.
The drought- somehow I feel that the drought is helping us, because everyone has to take a look at where the water is coming from. Everyone has to take a look at that. And most of all the people from this area need to take a look at it.
I feel like allot of time, when it is time get the fish, well then lets just get the fish. But don't do anything about it. The restoration of the fish or getting out there. Allot more needs to be done.
We can't just sit down at the table like this and expect things to happen.

Its the whole council. I don't see things happening for the Klamath River. Too many things are happening to the river and continue to happen. Nobody is helps, what can I do. What can I do when agencies, people getting allot of money to protect our interest, your interests. Who is exactly protecting the sports fishery or the salmon trollers? Who is protecting their legal interests? Where are all the big time people who are supposed to have the power to do this? Nobody....? Are you as helpless as the Indians are??? This is pitiful. A pitiful bunch of people up here. Come on lets get off of our you know what, and do something. We are going to get the blame, come on what do we have to do get a lawsuit? If we all got a lawsuit together we could, we could claim a lawsuit for the river if we all got together, and get back all our water, because we could lose all of our fish as an endangered species. Gee, I'm not a super educated lawyer, but I can see that is what everyone else is doing to get anything going for our health and for our welfare.

I think the folks have used the litigation to get what is necessary to save our necks at every turn. The only thing you have work against is the big business, otherwise we are all going to be homeless people, helping the rich get richer.

I've seen the habitat document, and I'm pretty disgusted with it. I don't see anything happening. Where is the money and all the lobbyist to do all this. It has to be done you can't just talk about it. Who is going to do all this? Where and when is it going to happen? You need to set up meeting for this, so people can come together. And work together on as Northern California interest of the Klamath River. I'm sure there were interested biologists that wanted to make money to set up the restoration. What is happening? I don't see anything happening. Did the people get away with the destruction of it, and going about their business.

Is there any people on this council, that would go to our congressional offices? I am anxious to see public meetings do something. This group is shrinking because nothing is happening, people become disinterested, and they move out from it, because nothing is happening. Because we look to you for something to happen, and nothing is happening.

2-14-91 KFMC PUBLIC COMMENT

Richard L. McCovey Chairman Y.F.A.

I represent the Yurok Fisher's Association. And I'd like to address this august of subliminally pitifull group, that this gentleman here from Oregon, we need to stick together. We need to fight this fight for the water. I say this as a personal individual. I am not speaking for my Organization, because we didn't vote on it, but I'm sure they feel the same need.

Us as human beings, that are dependent on the fishery and the water itself. We need to carry the fight to congress to change this. I feel the need to bring it up that, this whole thing is based on money. Money being the element that controls congress, that it is going to be a rough fight.

I'm sure the tribes are going to get involved in the fight for the water. I think that the tribes probably have the best toe hold to regain the water right through prior appropriation. The water rights through the tribe needing the water for the fishery and for that I know the Hupas', now that the haven't channelled all their money into fighting the Yuroks', they are going to go in that direction too.

So, hopefully when the Yurok Nation becomes evident we are going to try for the same thing hopefully. So I'd like to go on record to say, I fully agree as a Yurok individual, that we need to pull together at least one time. And once it's back on a healthy road again, we can start fighting again.

2-15-91 KFMC PUBLIC COMMENT

Vlayn McCovey President Resighnini Rancheria
Y.F.A. Adviser

I would like to say here, the Yurok Fishers' this year were not looking at a commercial fishery, and what we are looking at is not anything near what we need is our subsistence.
I want you people to understand something, especially you, Mr. Natt Bingham, to give a name to the boogieman, is this; we have taken it in the shorts for **too damn many** years and we the Yurok Indian People are not going to step back any more.
12,000 fish is our "bottom bottom" line. Thats it! And at that we are being generous and at that we are being reasonable. Now if you want us to be unreasonable, we'd claim it all, and shut everything down.
That's unreasonable, but we are being immenetly reasonable here, and we want you people to understand that.
We have been backed up against the wall, we have no place further to step. We will **NOT** step back again. Thank you.

2-15 91 KFMC PUBLIC COMMENT

Richard L. McCovey Chairman Yurok Fisher's Association

The Yurok People have been harvesting fish at less than equitable rate regardless of the five year agreement, an agreement that had been legally recognized and signed by the KFMC members.
We, the Yurok People, are the only party of this agreement that has conformed and honored its existence.
We have been consistently forced to harvest numbers that are below our essential fishery needs.
Cosidering, in seasons of ;lent we are non-the-less forced into low numbers for harvest in the name of conservation, we the Yurok Fisher's Association strongly urge the U.S. Government, and all its agencies thereof, to uphold its Trust Responsibility in its Stewardship to conserve the Yurok fishery as a natural resource.
Due to the fact, that the PFMC has consistently ignored our plight as a lawful Tribal Fishery, the Yurok Fisher's Association cannot over stress that the indemnity of the fishery and the fishery conservation needs are being irreprehensibly usurped by the regulatory agencies involed , we the Yurok Fisher's Association are asking the U.S. GOVERNMENT to uphold its Trust Responsibility in this last year of a unilaterly honered agreement to ask for and publish its intention to support the Yurok Tribe to harvest, one half of the available fish and/or under item 10 of said agreement, 12,000 fish, with an equal access contingency should escapement numbers change.
Also, we the Yurok Fisher's Association feel that we as ABoriginal Fishers' have a deep concern for fair and equitable treatment in harvest sharing plan of the public law 99-552, the Klamath River Basin Act, due to fact that the Ocean Fishery has consistently over harvested Klamath River stocks without regard for our, Yurok Tribes' "economic health" and the survival of the Klamath River stock.
Finally, The Yurok Fisher's Association feels that the "Predatory Economics" of the Non-Indian user groups, by influencing the regulatory agencies, ahve put the Klamath River Salsom stocks in severe jeopardy. The4eby, negating the basic goals of the Klamath River Basin Fishery Restoration Program.
I would also like to add that in light of, we Native Americans embrace the natural resource as part of us. For so many years the European Americans have embraced the program of plunder and exploit the resource until its gone. Now species after species that have suffered and disappeared the food for the salmon have disappeared through this program of exploitation. I feel that we are almost to the year 2000 and we are still facing this plunder, plunder attitude.

(cont.)

We always hear the american flag being raised, or whatever, I think that as Americans, Americans should all embrace these natural resources as what they are. Not to exploit them for the $dollar bill, and not to exploit them to extingtion. The sad part is that all these species that disappeared all had a decimal point put contingent upon their exsistance of how much they were worth to the people exploiting them.
So, in that light what we are talking about here is the demand just to finish it off and that would be that.
I think that the fish and their innocence to reproduce are the last guys in this model, the last guys that have the say, they don't even know how to count.
So thats basically pretty much how the Indian Fishers feel.
And when it comes to this man-here on the end- that we have been waiting. The facts and figures speak for themselves. We have been waiting for our lawful right to share in this fishery. We have waited for equitable treatment, we have waited for you people to at least address us as equals, or at least human being involved in the same thing.
But as none has been forthcoming and looks like none is still forthcoming and it remains that you are after the last fish and the fish mean the $dollar and the $dollar is the total reason why there is going to be so much screaming.
So as in consideration, as us as a Tribe "YES" we want the fish on the table. WE need the fish on the table.
We have waited long enough. We have consistantly heard "sue us, sue us". Well we heard it today again. There is, I'm hoping there is, maybe there isn't, but I'm hoping there is liability.
We have been cheated out of millions and millions dollars of fish, from the state of california, to taking away our right to fish. We have been cheated out of millions and million of dollars over this council not being able to come to an agreement. And the PFMC treating us as the way they have. There is a legal liability there somewhere.
So when it comes to you guys want to say " sue us" wll you guys this is not LA-LA land anymore.
WE are tired of it and this is where it lies, right there.

2-15-91 KFMC PUBLIC COMMENT

Carol Williams Yurok Tribal Member

I'd like to speak just a little beyond what he was just saying. As far as the group I feel that you would be adult enough, human enought and HUMANE enough to stop treating us like dog meat.
Its sorta like YOU the trollers are the only ones that deserve to live here, or deserve to have any money. No one ever stops to say that Native Americans have NEVER made a living off the fish, or the timber. Or have never ever enjoyed the richness that the trollers have had through out the years.
For 50 years we couldn't even fish, not even for subsistance. I remember the years that my brothers had to go down and make a few dollars being "indian guides" for the tourists. When it was a wonderful tourist industry on the Klamath River. That was when there was stil a lot of fish.
In all of this intelligence, that is suppossed to be living in the state of California, I have never EVER seen the Non-Indian people try to protect that resource. NEVER!!! And they are still not doing it now. Not to this day they are not protecting the water. They are letting the timber industry still run rampant up there.
What I have to say now is wether you want to believe it or not, you are going to have to believe it. That when you don't respect the resource, you are going to get it taken away. If you think its bad this year, wait until next year and the year after that.
If you don't come up with some kind of protection for the resource and start working to protect it, so we can stay out of the endangered species list. Almost everything on that river is endangered. And still we are going to choke it to death. Nobody even wants to think about that. You want to fight and kill the last fish.
Is that what you want to do? Well that is not how it works. Universal law says that you don't do that and get away with it. And you are not going to get away with it, I'm sorry, but it is going to get worse. It is real bad this year, but wait until next year. The whole state of California is going to be in real "BIG" trouble.
Here we are at war protecting the sovereignty of some country that isn't even a democracy. Our native land up there is suppossed to be a sovereign country and systematically the U.S. GOVERNMENT has taken, taken, taken, taken until we are in a state of genocide ourself, along with the fish.
Where is the humanity here? Where is the human ~~tone~~ ESS of this group of people.
I feel like I'm standing here waving my heart and soul in the midst of HELL here. This is pretty SICK that you could try and choke off the last of the fish. And if you could have had somewhere back there, some sense of conservation, you might look forward to a future. But, because you didn't respect it and every one knows that

(cont.)

I'm coming from. Because you didn't respect it, your going to get it taken away.
That is all I have to say.

YUROK PEOPLE'S PUBLIC COMMENT AT FEBRUARY 15,1991 KFMC

LEIF HELLMAN -Karok Tribe

I would just like to say that I don't see how anyone in this room can go away from here feeling good about what happened today, but I'm kind of at a loss for words at what just happened. This council for many years running attempted to address many difficult issues and have been having limited success in doing that. I don't think anyone here can take away that effort that what they have tried to do. But what I've just seen here was a totat of what I feel effort to circumvent the entire process, even though maybe the process, people say it's broke, it's not working, that may be true. But to circumvent that process, by, we the the folks for the last few hours watching you guys jump around,caucus, motion after motion being denied, being this and that, the no's and yay's, that's all good and fine but then when the council can't reach a consensus, the chairmans prerogative to address only certain ones and to totally circumvent all of that, even though maybe nothing was accomplished and nothing would be I feel it's a little bit on the sorry side for that. I just wanted to say that. I also wanted to make the point that I know everybody's hurting and has hurt in the last couple of years and this year is going to be worse than anybody's imagination no doubt, I would just like to say that I feel for the troll industry very much, I understand the livelihood and all of that, but I think the difference of how I see it, obviously coming from a biased opinion, the difference is we are talking about a livelihood of an industry, the other we are talking of a livelihood of the people. That what is at issue here.

Then I heard that "oh nobody is trying to circumvent and say that inriver isn't entitled to those 12,000" you know we just want to see what that is going to see what that is going to look like in the ocean. If you want to see what that looks like in the ocean, then you take that proposal and you model it. You are also modeling into unreality.

Dave Bitts- Ocean dude

" I have to ask the tribal resentatives which would you rather do, have your fish on the table or have us OFF the ocean?"

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Dave Bitts- Ocean dude

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ATTACHMENT 15

KARUK TRIBAL HARVEST MONITORING PROGRAM

TABLES

1 THRU 3

FINAL SUMMARY OF
HARVEST FIGURES
1990

Karuk Tribal Harvest Monitoring Program

TABLE 1.

A final summary of (C) harvest figures obtained through direct observation and sampling. Data group classification (C) Based on confirmed/varified accounts

	CHINOOK	COHO	STEELHEAD
	53-MALE	3-MALE	7-MALE
	58-FEMALE	6-FEMALE	6-FEMALE
	6-JACKS	0-JACKS	0-IMMATURE
TOTALS	117	9	13

Total for period one: 64
(Sept. 15 - Sept. 30)
Total for period two: 74
(Oct. 1 - Oct. 31)
Total for period three: 1
(Nov. 1 - Nov. 15)

*(C)
COMBINED SEASON TOTAL: 139
(all species)

Karuk Tribal Harvest Monitoring Program

TABLE 2.

A final summary of (UC) harvest figures
obtained through personal interviews with Tribal Fishermen
Data group classification (UC)
Based on reliable but un-confirmed accounts

	CHINOOK	COHO	STEELHEAD
	11-MALE	4-MALE	2-MALE
	2-FEMALE	5-FEMALE	2-FEMALE
	1-JACKS	0-JACKS	0-IMMATURE
TOTALS	14	9	4

Total for period one: 8
(Sept. 15 - Sept. 30)
Total for period two: 15
(Oct. 1 - Oct. 31)
Total for period three: 4
(Nov. 1 - Nov. 15)

*(UC)
COMBINED SEASON TOTAL: 27
(all species)

KARUK TRIBAL HARVEST MONITORING PROGRAM

TABLE 3

A final summary of *(C) and *(UC) combined harvest figures

	CHINOOK	COHO	STEELHEAD
	53-MALE 58-FEMALE 6-JACKS	3-MALE 6-FEMALE 0-JACKS	7-MALE 6-FEMALE 0-IMMATURE
TOTALS *(C)*	117	9	13
	11-MALE 2-FEMALE 1-JACKS	4-MALE 5-FEMALE 0-JACKS	2-MALE 2-FEMALE 0-IMMATURE
TOTALS *(UC)*	14	9	4
COMBINED TOTALS *(C) AND *(UC) (ALL SPECIES)	131	18	17

= 166

ATTACHMENT 16

Re-write of KFMC meeting minutes from January 11, 1991 [Page 11, beginning with 3rd paragraph in "PRESENTATION OF 1991 HARVEST MANAGEMENT PLANS: State of California (Odemar)]

Angler harvest of fall chinook is managed by monitoring the harvest downstream from Johnson's Riffle through angler surveys. Forty-three days after 1/3 of the allowable sport catch has been harvested downstream from the Highway 101 bridge, then the rest of the basin is closed to salmon take over 22".

Three areas on the Trinity historically had a very high catch rate that accounted for 40% of the total catch. These areas have been closed because of high catch vulnerability to stay within the limits set by the PFMC.

The sport fishing in the Trinity River is monitored through fish tagging operations at weirs. The Klamath River sport catch above Johnson's Riffle has been monitored from tag returns from the estuary seining operations. Estuary tagging operations may be discontinued because of budgetary constraints and because the operation did not produce useful information in 1990. Additional monitoring of the sport fishery will occur at other key areas if funding is available.

Re-write of Odemar's statement on page 13, line 14-15:

(Odemar): Disbanding the seining operation is still tentative. (Parenthetical statement should be deleted.)

NOTES FROM THE
OCEAN USERS MEETING
HELD FEBRUARY 13, 1991
EUREKA, CALIFORNIA

Feb 13, 1991 at 1:00 p.m.

Present: Don McIsaac, Joe Lesch, Nat Bingham, Mel Odemar, Keith Wilkinson, Bob Hayden, Scott Boley.

Introductions: John Greenville, Dave Bitts, Frank Warrens, Bill Duncan, John Wilson, Mudgie McCovey, Carole Jones, Dennis Pecaut, Jim Walters, Jim Johnson

(Odemar): The purpose of this meeting is to make ocean sport harvest recommendations to the KFMC, then the PFMC. The March and April KFMC meetings will address the commercial ocean harvest issues. I intend to briefly go through the status report by the tech team. The bottom line is that the numbers are lower. I've asked Joe Lesch to report on catch patterns for past years. We've tried to look at what this year's catch will be. We want to discuss harvest cuts then we'll develop preferred options to take to the KFMC. We want to get an appropriate recreational season for the KMZ.

The Tech Team report indicates the stock estimate is 88,100 3-year olds and 35,700 4-year olds. This is 37% of 1990 preseason estimate. For the first time, we will manage for the escapement floor of 35,000 natural spawners, in-river. Roughly 26% of the total in-river run goes into the hatcheries, the management floor is for natural escapement. In-river fisheries are also on top of this. Total harvest for all harvesters will have to be reduced by approx 50% from 1990, to meet the natural spawning floor. The KFMC will decide allocation later. Unless the trollers are willing to take a larger hit, to provide for a less than 50% reduction in sport fishery, we'll proceed with this assumption. Joe will discuss most recent harvest patterns from past years. We attempted to look at a one-fish bag limit, but data was inaccurate.

(McIsaac): Supposing all other stocks are down as well, if you had the same harvest rate, you'd catch fewer fish. Isn't this a double hit?
(Odemar): Yes, if all stocks are down.

Q: It seems that if you reduce the harvest rate by 50% and stocks are down by 50%, you reduce harvest to 25%. What's the objective, to reduce harvest rate, or harvest numbers?
(Odemar): The objective is a spawning escapement goal of 35,000 in-river. There are three components, hatchery fish, natural spawners and fish harvested. We have to manage for the 35,000 spawners.

Q: A reduction in 50% harvest is suggested by the summary paragraph Tech Team document. I'm confused.
(Odemar): I can't answer this question. I don't know how they did their calculation.

(Bingham): There is a contradiction in this document, it says 50% harvest, and 50% harvest rate. It says a 50% reduction in overall '90 harvest. The '90 harvest was well below the .375 harvest rate, in numbers. A reduction from the '90 harvest may result in a 50% reduction in rate.

(McIsaac): When managing for the escapement floor, we're talking about numbers.

Q: Of the 4-year old fish, what percent do you expect to spawn?
(Odemar): I can't give you the number.

(Boley): I think it's 88 to 90%

Q: What about 3's?
A: 94%

(Odemar): Ocean harvest rate for 4-year olds, last year was over 54%, the target rate is 37%. The harvest rate was 20% higher than what was modeled for.

Q: Is there a generalized number used in the model? It looks like there may not be enough fish to provide for the escapement.
(Odemar): The ocean harvest is designed for 4-year old fish.

(Hayden): We're trying to return 35,000 fish, not 4-year olds.

(Odemar): Right, this is returning adults. Not distinguished. I think they use an average maturity rate of 38% for 3-year olds.

Q: Is the team saying that we're looking at a 50% harvest from the '90 season? Does this mean that a 50% cut would not achieve the 35,000 escapement?
(Bingham): Because this happened in '90, it doesn't mean it will happen next year. Every year is an anomaly.

(McIsaac): It points to a harvest catch of less than 50% of last year. Unless there are other fish elsewhere, the number will be reduced.

(Odemar): With the numbers that exist this year, if the sport harvest were not reduced, the sport catch could take all harvestable fish this year. Today, we need to come to agreement as to the kinds of reductions that are most acceptable. But, before that, Don, anything about OCN?

(McIsaac): The natural coho situation, we reviewed and forecast the population and we had about 500,000 fewer fish than projected. Regarding Oregon natural component, the escapement goal is 200,000, in bad years 135,000. The model said it should be 170,000, the actual count shows 70,000. This is the third year in a row it has been low. This will trigger a kick-in of the overfishing regulation by OMC. The catch was stronger toward the south end. This year's forecast is for 1.7 million, a fairly mediocre showing for Columbia River late coho, a strong showing for early coho. There are many concerns that the predictor is not good, but the team stayed with the 400,000 predicted abundance. This year, we hope to do a thorough review of the predictor. We hope to get the 135,000 floor, and maybe the 200,000 floor. We manage for 50% harvest rate, down to 260,000 escapement, if the forecast is less than 270,000 escapement, the harvest rate is lowered.

Q: What kind of restrictions do you see on sport catch for this year?
(McIsaac): Many options, trying to pick the best one. We hope to avoid what happened last year. I think we're looking at a few more fish than last year's catch. We want to be conservative for the Oregon zones.

(Odemar): We've used coho to reduce chinook harvest in the KMZ. We've had cohos in the catch regulations. Is this an acceptable tool for this year?
(McIsaac): Yes. We don't want to eliminate that option at this point.

Q: I thought it was out because of the low coho numbers.
(McIsaac): Everyone should be aware of the low numbers.

Q: Shouldn't we have had a tech team here for this meeting?
(Odemar): We haven't had them here in the past. In the past, we knew that the harvest rate was .375, we don't know that this year.

Q: Shouldn't we have the tech team represented at this meeting?
(Odemar): Joe has the technical information.

(Lesch): Nothing specific to KMZ impacts. These charts relate to past seasons. Done as a worksheet to help us understand where we might make cuts. Page by page, the first one tried to look at last year's season, estimating reduction in catch. We tried to assume what would've happened if the bag limit was reduced to one fish, no matter what species. The net savings = 33% 5,796 fish. This estimates the impact to the '90 season with a 1-fish/day bag limit, and assuming the fishing effort remains the same, and no one's throwing their first fish back. Also, this assumes Oregon's catch would be the same. We also considered the effect of 2-fish/day bag, one chinook only. The net savings = 942 chinook.

I applied same formulas to the '89 catch, which was considerably higher than the '90 catch. The impact is correspondingly higher, with a net savings = 22,644 fish. At a higher catch rate, when fishermen are catching more chinook, there is a greater savings.

Q: So if there a fewer fish, then there is a lower savings...
(Lesch): Right.

(Odemar): In low abundance years, there will be very little impact.
(Walters): Fishing effort fell off when we went to this regulation in part of last year.

(Lesch): Savings would have been 20%. On next page, considering a 2-fish/day bag limit, with only one chinook, indicated a savings of 15%. Next page, the two week period in which the percentages of the season's catch are made. The next page shows the cumulative catch.

(McIsaac): This is a 5 year average, does this pattern follow for '90. Were the coho around longer? Was the peak around the first part of July last year?
(Lesch): Yes.

Q: Could we get this chart for each year, rather than by average?
(Lesch): Yes.

Q: This is by species?
(Lesch): Yes. The most dramatic impact would be between July and August.

(Bingham): The total sport chinook harvest was 37,816 for the KMZ, for all stocks.
(Lesch): In California only, 18,400 in the zone were harvested, about 50%.

(Wilkinson): I heard some place there were 33,000 coho caught.
(Lesch): In California alone. From Horse Mountain to the Oregon border. After the '86-'90 bar, there's a cumulative catch, indicating adjustments will have to be made from July to mid-August. In comparison, the '81 to '84 average catch, by species, show fewer fish up front because the season was opened Memorial Day, I think. All charts are for Horse mountain to Oregon. In the back, tables A-1, A-2, A-3, have 1990 commercial landings, the last three tables have angler effort for sport fisheries.

Q: Could we review skiff landings for '72-'73 landings, comparing with charter landings, at a later date?

(Lesch): Yes. The charter boat landings come from the log books kept by charter boat operators.

(Odemar): We need to have a round table discussion, each of you identifying an option or goal you consider important for '91. Be as honest as you can, recognizing we're looking at reductions. We don't know how many will be modeled for entrance into the river.

(Hayden): May be too early to focus, other than to assure a season from Memorial day to Labor Day. When the actual numbers come out, we can discuss further. I think we may be wasting our time, since we have nothing to deal with.

(Warrens): In response to Bob's comment, we need ideas and "What if" scenarios. We do need to list all options.

(Odemar): Right. If we manage for the same season lengths, we may have to look at reducing to a 1-fish/day bag limit. The tech team may even say at that level of catch, it can't be done. There is a lot of uncertainty here.

(Bingham): There was uncertainty about last year's numbers too, so we need to address our options so PFMC will deal with this issue. From the troll fishery, we would like to help, but we don't want to do it at the cost of a total closure, we think that all fisheries should share the pain. This should be decided on by representatives of each fisheries.

Q: What would be an effect of having no size limit, but just keeping the first two fish caught?
(Odemar): People would sort for larger fish.

(Odemar): These numbers presented by Joe have not been reviewed by the tech team. Joe did this to give us an idea of possible effects.

Q: Do you think the KFMC will enact the overfishing regulations?
A: Yes, any 3-year period of below floor levels, kicks in certain procedures to recover.

(Lesch): All we need to do today is give the KFMC guidelines with our suggested options. If other cuts are necessary, we can have other options, ranked by priorities.

(Wilkinson): The recreation fishing interests in Oregon, in the KMZ, want a 2-fish/day bag limit, a ratio fishery (1/1 fishery). This would be a minimum contribution on their part. A 1-fish/day reduces the fishing effort, tourism is reduced. Severe economic dislocation occurred because of the troll restrictions. The repercussions may be questionable if this is duplicated in the recreation fishery.

Q: Seems there's only a handful of things we can do for reducing sport harvests. Some things in the past didn't fly, quotas for example, time and bag limits also, what could we add for options?
(Odemar): Quotas, days of the week, block closures, bag limits. There were ideas put out as to what was wanted. Another thing, looking at the catch patterns, we don't want to open the season up when you have the potential to overshoot harvest.

Q: Are we seeking to reduce the fishery by 50%?
No answer.

Q: What is the catch projection for 1991? Presumably, this will be lower. The communities would care less about the numbers, they need to advertise the seasons though.

(Boley): You have to reach an escapement of 35,000 spawners. There's only certain ways to get this. It must be taken out of various KMZ zone fisheries. For each broad category, you'll have tools you can use to provide those fish. You have to identify these tools to calculate these numbers saved.

Q: Is this doable by Friday?
A: They're not prepared to do this, but can do it in time.

(Boley): This group should outline and prioritize acceptable options.

(Hayden): With fewer fish in the ocean, there may be a lot less effort, the resulting catch reduced. One option would be to begin the season, study the CPUE, then change appropriately.

(Odemar): I recommend against triggers. About the time you pull the trigger, the target has passed you by. You could miss your target if restrictions are made too late. I think the best thing to do, if a ratio fishery is necessary, is to do the same thing as last year, so fisherman can make their plans accordingly.

(Bingham): One possible approach, reverse the strategy. Traditionally, triggers have been tools to kick in additional restrictions, it might be appropriate to have tight restrictions at the start of the season, and relax the restrictions if there is a great abundance. It might be possible, but I don't know if it would hold up.

(Walters): The trigger mechanism worked in years past.

(Odemar): It worked for that one specific year, even though the trigger came in under our limit, the total number that came in was about 1/2 of what was expected.

(Hayden): That particular year, there were few Klamath fish caught, but impacts to the recreational fishery was extensive.

(Odemar): You may find that the KFMC may hit the trollers with severe restrictions.

(Wilkinson): I recommend the whole KMZ have a ratio fishery from Memorial to Labor day, work this up with the model, see what the savings will be. This helps the communities to plan for the season.

(Greenville): We can't do much about the number of fish in the ocean, but we can control the effort. The way to reduce the harvest rate for sport fishery, reduce the amount of time by the charter boats by 50%.

(Odemar): The charter boats catch a small percentage of the sport catch, the skiff catch is a greater proportion.

(Pecaut): The charter boat operators don't fish, we sell the opportunity to catch a fish. We're naturally going to cut down harvest because there are fewer fish to catch. The ratio fishery hurt the charter operators. You might consider reducing the punch-card numbers over a 7 day period.

(Bingham): The trollers agreed to try to let the sport fishing season go from Memorial to Labor days.

<u>Initial goals identified by committee members:</u>

(Hayden): I recommend an assured season from Memorial day to Labor day. 92% of the ocean harvest was by the commercial troll fishery. The number of fish saved in the ocean sport fishery is insignificant.

(McIsaac): ODFW's goal is to meet the 35,000 escapement and reduce overall harvest by 50% over last year.

(Bingham): Troll and recreational harvest inside the KMZ was similar. To say that taking a little bite from the troll fishery is not appropriate. I agree with your goal of Memorial to Labor Day season, I add the goal that the ocean users share in the burden of reduction.

(Wilkinson): From a recreational standpoint, a Memorial day to Labor day, and a 2-fish/day is the immediate goal.

(Boley): I echo Don's goal of achieving 35,000 escapement.

(Odemar): For CDFG, a goal is to minimize change from previous season restrictions.

Second order of goals:

(Odemar): Anyone from outside?

(Bitts): Would like to see "All" users share in the reductions. And maximum predictability of reduction.

(Odemar): Do the in-river folks have any goals?
A: Think that ocean users should be reduced. Indians have many restrictions already.

(Odemar): I wasn't going to ask for in-river comments, but this group has identified all users.

(Pecaut): I anticipate a slower season. Take the discrimination between the Kings and Silvers off the regulations.

Q: Keith, did your two fish per day leave open the option of a ratio fishery?
(Wilkinson): Yes, this is an option tool to discuss later.

(Pecaut): There is still a recreational fishery in the little strip from Trinidad south.

(Bingham): This fishery took 193 Klamath River fish in that fishery. The table I have lumps the Eel and Oregon fisheries together. The fall fisheries are not broken out here.

(Odemar): We will include as a goal, "Continue the Eel River fishery".

(Walters): No goals to add, I think we need to put the tools in now.

(Johnson): More equity between Oregon and KMZ for Coho.

(Wilkinson): I agree, the ocean recreational fishery was shut down for a number of weeks.

(Boley): This may have an impact on the KMZ.

(Odemar): This will be addressed by the PFMC, but Jim, the normal access the vessels have to cohos has been reduced. Many would argue that the take of coho in the KMZ is being given up.

Identification of options:

(Odemar): We want to discuss the basic tools available to us. The length of the season is one tool and within the season there can be closures. We have the bag limit and ratio fisheries also.

(McIsaac): Maybe we should list them, go around and ask people how they want them ranked. Time area closures within the KMZ shouldn't be considered, we should talk about one complete area only.

(Warrens): Is there an analogous situation in the KMZ as in the Columbia River zone to target on fish headed for specific areas?
A: Not here, not enough data.

(Wilkinson): A scenario recommendation. If we had a Memorial day to Labor day fishery, 2-fish/day bag limit, with a trigger date of July 1 to Aug 15, with reduction of total season length, with reduced fish there, and reduced effort, we may achieve a 50% harvest reduction of Klamath River fish. I'd like to see this scenario looked at in detail by the tech team. This inflicts a minimal amount of pain on the sport fishery.

(Odemar): This will be a goal, lets identify as such. Memorial to Labor Day, 2-fish limit; from 6-29-91 through 8-15-91, a ratio fishery allowing 2 cohos, but only 1 chinook.

(McIsaac): This is allowable if catch stays low. Looking at tables discussed earlier, chinook landings were down but fishing effort remained the same.

(Wilkinson): The business community needs the opportunity assured, not necessarily the numbers of fish. The sport fishing community is asking for something they can market. What hurt us was the accelerated recreational fishery in the KMZ which caused more effort in the zone. I recommended two fish per day bag limit, one of which may be a chinook.

(Lesch): There seems to be about a one year lag in effort tapering off. I think we'll see that this year.

(Boley): If you can get the sport catch to 2,000 chinook in the KMZ, that's a reduction in the catch, and won't impact the fishery too much.

Q: Is there data available which quantifies the amount of coho shakers caught in order to achieve the ratio?
(Odemar): There may be data there, making certain assumptions. I guess the data's there.

Q: Isn't there an assigned shaker mortality in the Model?
(Odemar): I think its assigned afterwards in a situation without a quota, but in a quota fishery, those fish are subtracted at the beginning of the projection.

(Boley): We looked at the tags from the past, looked at how many chinook may have been killed because of shaker mortality. I don't think the numbers were large. Coho data may not be there.

(Warrens): The tech team will take a hard look at ratio fisheries, and may be critical.

(Bingham): The main feature of this proposal, and how it differs from last year, is that it doesn't have a May fishery. I see that this scenario may only save 300 fish over last year's fishery. I think this is close, but maybe we need more.

(Odemar): Let's look closer at this later. Looking at the goals, according to this scenario:

- 1st goal met, Memorial day to Labor day sport season.
- 2nd goal, reduce harvest 50% to meet Klamath River escapement, I don't think it will be met under this scenario... but the sport fishery is relatively low to the troll fishery.
  This goal may be unrealistic... maybe it can't be met.
- 3rd goal met, it allows a 2-fish/day bag limit.
- 4th goal met, it does minimize change from previous seasons.
- 5th goal met, it does provide maximum amount of predictability for sport.
- 6th goal met, it does continue the Eel River fishery.
- 7th goal not met, doesn't provide coho equity between Oregon and KMZ.

(Odemar): Nat, concerning the 2nd goal, your troll fishing constituency does not expect to take the full reduction. Do you see this as meeting the goal of equal reduction?
(Bingham): I would like the tech team look at this.

(Odemar): The coho equity goal is one big issue which will have to be played out.

(Lesch): With this kind of scenario, the only difference is that we're not going to fish in May, and one fish can be a chinook in June, we don't see a substantial savings in catch, probably around 400 fish.

(Odemar): We can go forward with this scenario as an option. If this doesn't achieve the savings, what is the next step?

(Bingham): If you all believe that the season will stay within the limit, why not go with a quota? I just say this, not offer it.

(Odemar): This takes away the guaranteed season.
(Bingham): OK, I'll withdraw.

(Walters): A one week closures can be instituted as a tool if this doesn't produce enough savings.

(Lesch): Should we list possible adjustments to the season? Bag limits, block closures?

(Odemar): Everyone agrees that a 1-fish/day bag limit is out? A: Yes.

(Johnson): Look at the savings with this scenario, then model in block closures.

(Odemar): Do you have it in as a trigger?
(Johnson): Put in as a loaded closure, the second was a trigger.

(McIsaac): Ask everyone if they want a complete closure by block, or a 5 day fishing week.

(Warrens): We have discussed at length these types of closures. The least disruptive is to look at closures by days of the week. Saturday and Sunday equate to 60% of the effort.

(Bingham): A much larger percentage of fishing people are here on vacation, that figure may not be accurate.

(Wilkinson): We're not serving metropolitan areas, but don't know that the effort would be reduced. We have had loaded block closures, I think this is critical to have them, with a high degree of acceptance. The tech team should look at this before we can hang a lot of weight on it.

(Bingham): To make a proposal... I'm willing to accept Keith's proposed scenario as an option. I think we need to say there's a degree on uncertainty of impacts, I suggest we have other options to provide the KFMC with other tools to work with.

(Wilkinson): Then we must make another option more restrictive, and another option more optimistic.

(McIsaac): If you ask the tech team to model this, they will want to know what else is occurring with the other fisheries.

(Wilkinson): I'm not considering further closures outside the zone. I think this scenario will achieve this.

(Lesch): I'm still not satisfied with this scenario. Allen Baracco stressed that the stock will not support the level of fishing we had last year, on Klamath River stocks. Since we're so opposed to 1-fish/day for a restriction, we should tell the tech team that it is unacceptable.

Additional comments on the suggested scenario:

- The KFMC has to allow for the 35,000 spawner escapement.
- Continuity is a must from the economic standpoint. Block closures don't provide for continuity. When fisherman think the season is over, they're gone for the season.
- Oregon fishermen would rather have days of the week or block closures rather than 1-fish/day bag limits.
- I question whether there is not a 1 to 1 trade off of a day of the week closure from weekend or weekday closures.
- The goal of acceptability with minimum change is important because each following year will be impacted.
- A day of the week closure doesn't impact vacationing fishermen as much. The recreational business community would prefer a day of the week closure.

(McIsaac): We should put one more option up, which would be less generous.

(Odemar): Do you suggest a completely new option, or a twist on this scenario?
(McIsaac): A twist to this scenario...

(Wilkinson): Let's toss quotas out...
(Odemar): OK, then let's look at what period of time we want the closures. We have 50% of the chinook catch and over 50% of coho catch in July and August. What is everyone's feeling?

(Boley): Central to all options is the savings to Klamath River stocks.

(Odemar): Maybe we should recommend the entire array of closures, day of the week, etc. and have tech team model these different closures.

Discussion of Day of the Week closures:

Q: We had Monday and Tuesday closures in the past, what was the effect?
(Odemar): I don't know. Most importantly we're telling the tech team what we don't want.

Additional comments:

- There is no special day of the week closure that will achieve the savings, it's not a weekend fishery.
- A weekday closure doesn't knock the local weekend fisherman out of fishing.
- A 5-2 closure may be the most favorable
- A 4-3 is too much of a cut during the season.

(Odemar): Keeping with a 5-2 restriction, we can expand the duration as need be. If we end up with too many combinations, it's too unwieldy. A front loaded restriction is better and more predictable.

Q: Are we now talking about extending the restriction beyond the Jun 29 to Aug 15 dates?
(Odemar): Rather than setting dates, we can expand in 1 week increments to achieve the goal.

(Hayden): I'm concerned that we're trying to save 2,200 fish here. I call your attention that 1,000 fish is only a minor reduction in the troll fishery.

(Warrens): I've seen the troll fishery be reduced in the KMZ substantially, to almost nothing. I believe the sport fishery should beginning taking cuts.

(Pecaut): Then the trollers should take a daily limit. The majority of our people are law abiding, if you cut down the number of fish per week, it will affect the meat hunters. If you cut a couple of days per week, some guys may miss out.

(Bingham): Regarding Bob's comment, in the KMZ last year, trollers took 19,000 fish, sport fisherman to 37,000 fish. There's equity. Let's keep it in the zone in this discussion.

(Hayden): In the recreational fishery outside the KMZ, the amount of Klamath River fish taken are minimal.

(Bingham): Our minimum need goal inside and outside the KMZ is to access as many non-Klamath River fish as possible. This is tough for my constituency to take an unproportionate amount of cut.

Q: Are we going to go beyond our two options?
(Odemar): This is all we need to do at this point. The preferred option is Keith's scenario, additional closures will be initiated if further reductions to harvest are necessary. Also, quotas and 1-fish/day bag limits are not acceptable.

** Consensus on first scenario **

(Odemar): Additional 5-2, Monday-Tuesday closures may be necessary, dependent on what the tech team reports. Bob, are you saying you won't accept additional closures?
(Hayden): Right.

(Wilkinson): So, this other option is not by consensus.

(McIsaac): I support both options.

(Bingham): I support. Consensus may not be necessary.

(Wilkinson): I support.

(Warrens): I support.

(Odemar): Let's run this by the goals again.

- Memorial day to Labor day season? Yes.
- Reduce harvest by 50%? Maybe not.
- 2-fish/day bag limit? Yes.
- Minimize changes from past restrictions? Yes, somewhat.
- Continue Eel fishery? Different issue.
- Equity coho fishery in Oregon? Maybe not.

(McIsaac): Why did we just talk about sport and KMZ fishery?
(Odemar): The Ocean troll will be a big battle in March and April meetings. The KFMC hasn't reached consensus on the troll and sport harvests.

(Bingham): This is where the process starts. The impact is calculated from this option, then worked into the overall harvest negotiation. The last sentence in the option, will cause changes to be made in this preferred scenario. In-river users target the troll fishery and not the charter fishery. The number generated in these options will be inserted into the complete negotiation.

(Bitts): We're not talking about a large number of Klamath River fish in the sport fishery. However, last year the PFMC discussed providing 3,000 fish for an in-river commercial fishery. The Indians got the fish, we lost about one week of fishing. The more severe the restrictions on the troll fishery, the more we have to cut back on the marginal times. It costs us for those Klamath River fish we can't fish for.

(Wilkinson): What about the hake fishery? We need to begin to have some accountability on that fishery and how it impacts on the Klamath River stocks. This is something we need to know.

(Boley): The total take is about 2,000 metric tons for the american fleet. In the past, 4 salmon per metric ton were taken. At this rate, you impact 25,000 salmon, what the contribution rate is we don't know.

(Wilkinson): One other aspect, if we can put a handle on the incidental catch, if they're catching juvenile fish, they may be the reason why our predict-ability is poor.

(Odemar): This is something to bring to the PFMC meeting.

(Johnson): Chinook salmon being caught extensively in the pollock fishery.

(Odemar): Factory trollers have moved into the Washington area looking at petrolle sole. They were moved out because of salmon impacts. The observers are supposed to be in place this month.

(Bitts): We hear that the whiting fishery may be closed to protect the incidental salmon catch.

Meeting adjourned @ 5:30 p.m.

The attached tables and figures show recent and historical landings data and analyses relating to in-season salmon landings patterns. These tables and figures may be useful in helping you to determine where savings of chinook may be achieved, if necessary, during the 1991 ocean recreational salmon season.

LISTING OF TABLES AND FIGURES ATTACHED

Estimated percent reduction in the recreational ocean salmon chinook catch and numbers of chinook that would have been saved from Horse Mountain to Crescent City during 1990 assuming different regulations.

Estimated percent reduction in the recreational ocean salmon chinook catch and number of chinook that would have been saved from Horse Mountain to Crescent City during 1989 assuming different regulations.

Estimated percent reduction in the recreational ocean salmon chinook catch and number of chinook that would have been saved from Horse Mountain to Crescent City from 1981-1986 assuming different regulations.

Average Recreational Salmon Catch For 1986-1990 by Species and 1\2 month Period.

Cumulative percent of 1986-1990 Recreational Salmon Catch by Species and 1/2 month Period.

Average Recreational Salmon Catch For 1981-1984 by Species and 1\2 month period.

Cumulative percent of 1981-1984 Recreational salmon Catch by Species and 1\2 month period.

California troll salmon fishing effort in number of deliveries and days fished by area of landing and month for 1981-1990, with the 1971-1975 and 1976-1980 averages.

California troll chinook and coho landings in numbers of fish by area of landing and month for 1981-1990, with the 1971-1975 and 1976-1980 averages.

Angler effort in number of days fished for the recreational fisheries by major port, year and fishery.

Chinook salmon landings in number of fish for the recreational fisheries by major port, year and fishery.

Silver salmon landings in number of fish for the recreational fisheries by major port, year and fishery.

ESTIMATED PERCENT REDUCTION IN THE RECREATIONAL OCEAN SALMON CHINOOK CATCH AND NUMBERS OF CHINOOK THAT WOULD HAVE BEEN SAVED FROM HORSE MOUNTAIN TO CRESCENT CITY DURING 1990 ASSUMING REGULATIONS AS FOLLOWS:

1) A CATCH OF ONLY ONE FISH OF EITHER SPECIES PER ANGLER
2) A CATCH OF TWO FISH WITH ONLY ONE BEING A CHINOOK THROUGHOUT THE SEASON

DATE	MAY 1-15	MAY 16-31	JUN 1-15	JUN 16-30	JUL 1-15	JUL 16-31	AUG 1-15	AUG 16-31	SEP 1-15	SEP 16-31	SEASON
CATCH	46	927	2104	3721	6305	4559	474	170	96	9	18411
(1)											
%SAVED	40	39	38	43	33	18	11	11	42	0	
#SAVED	21	362	800	1600	2081	821	52	19	40	0	5798
(2)											
%SAVED	40	19	10	15	0	0	0	0	0	0	
#SAVED	18	176	210	558	0	0	0	0	0	0	942

ESTIMATED PERCENT REDUCTION IN THE RECREATIONAL OCEAN SALMON CHINOOK CATCH AND NUMBERS OF CHINOOK THAT WOULD HAVE BEEN SAVED FROM HORSE MOUNTAIN TO CRESCENT CITY DURING 1989 ASSUMING REGULATIONS AS FOLLOWS:

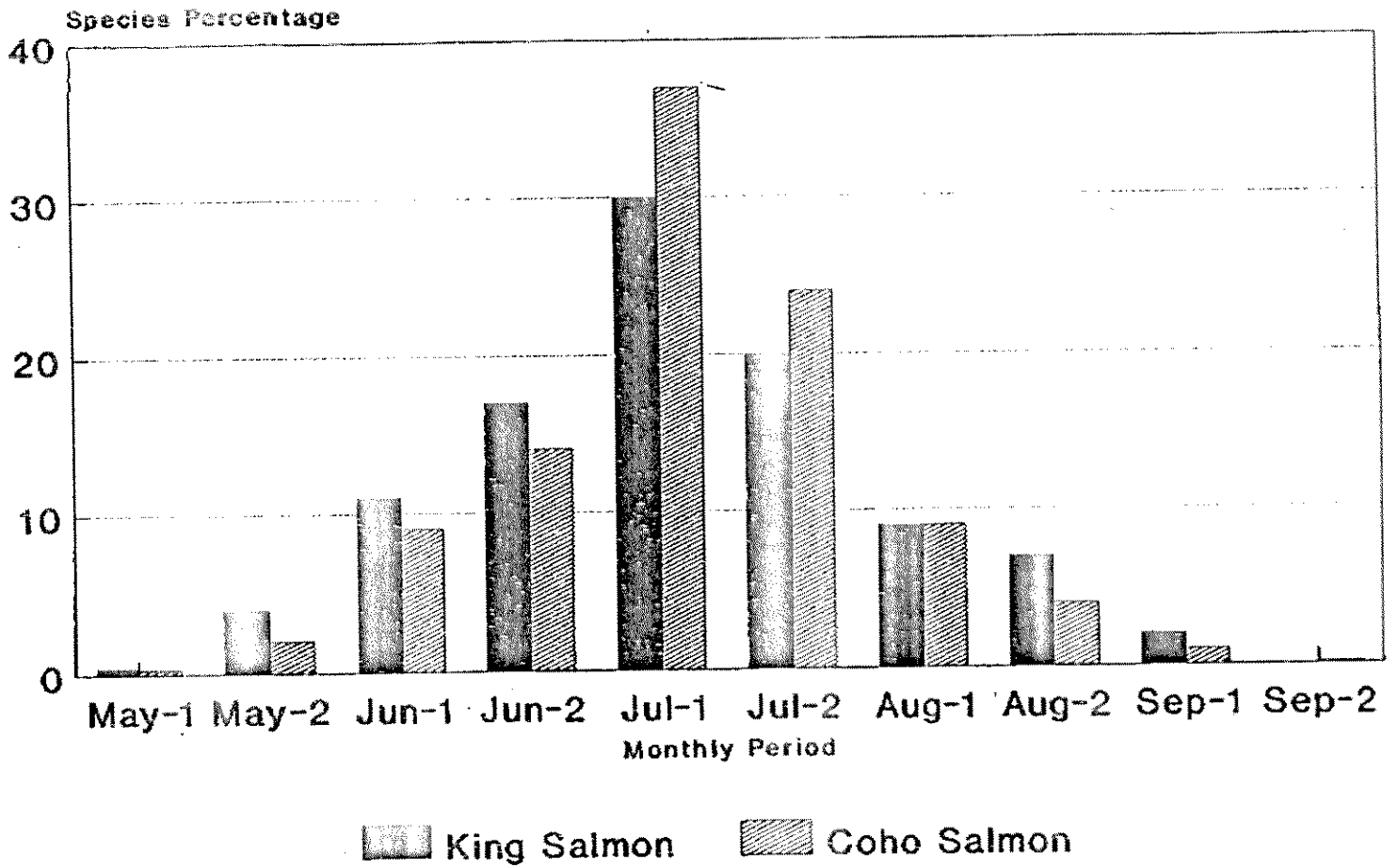
1) A CATCH OF ONLY ONE FISH OF EITHER SPECIES PER ANGLER
2) A CATCH OF TWO FISH WITH ONLY ONE BEING A CHINOOK THROUGHOUT THE SEASON

DATE	MAY 1-15	MAY 16-31	JUN 1-15	JUN 16-30	JUL 1-15	JUL 16-31	AUG 1-15	AUG 16-31	SEP 1-15	SEP 16-31	SEASON
CATCH	489	1573	5539	5553	14883	15302	6185	242	95	12	49873
(1)											
%SAVED	30	45	46	45	47	46	42	30	39	0	
#SAVED	147	708	2548	2499	6995	7039	2598	73	37	0	22644
(2)											
%SAVED	17	25	21	13	18	25	19	0	17	0	
#SAVED	83	393	1163	722	2679	3826	1175	0	16	0	10057

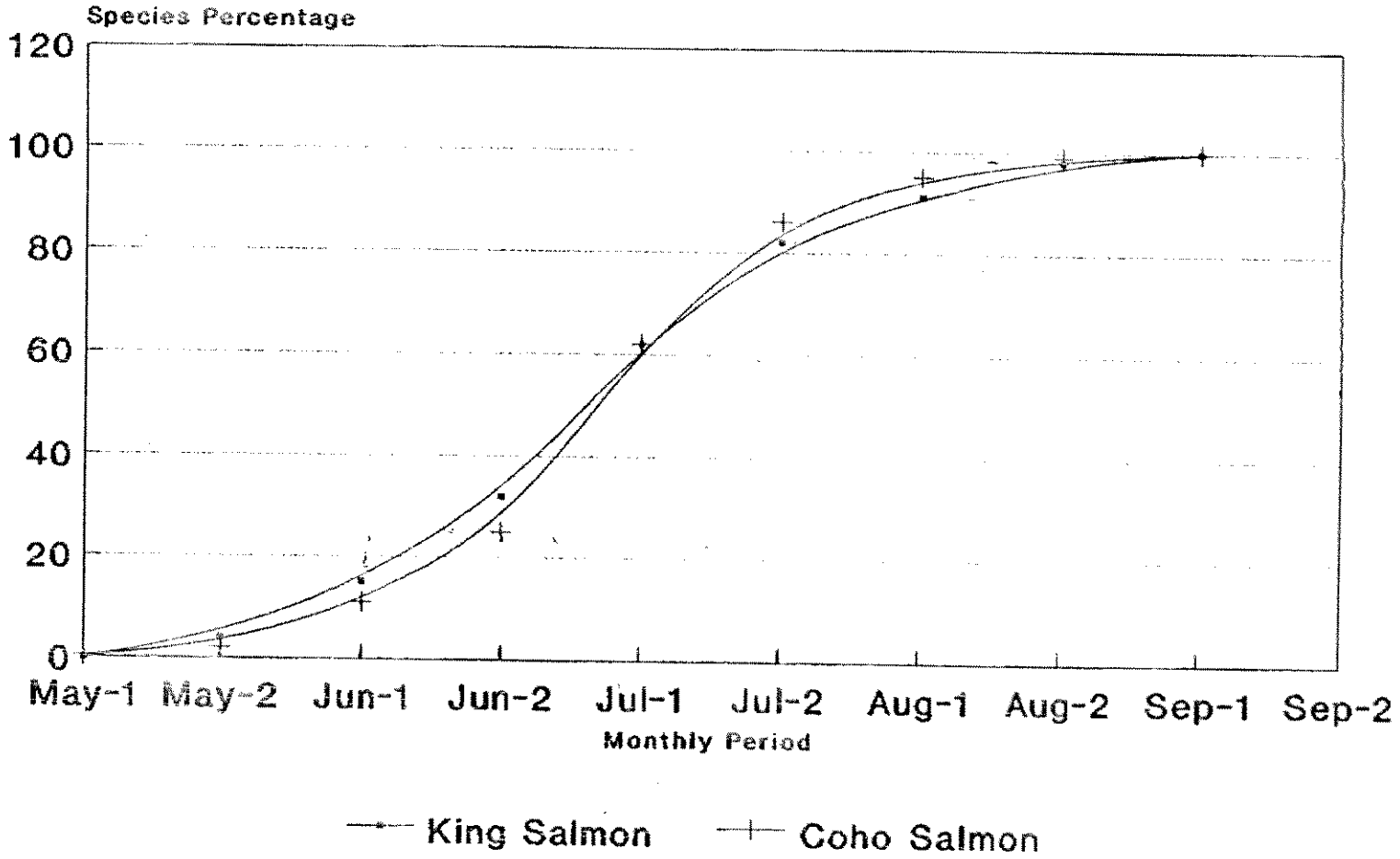
ESTIMATED PERCENT REDUCTION IN THE RECREATIONAL OCEAN SALMON CHINOOK CATCH AND NUMBER OF CHINOOK THAT WOULD HAVE BEEN SAVED FROM HORSE MOUNTAIN TO CRESCENT CITY FROM 1981-1986 ASSUMING REGULATIONS PERMITTING A CATCH OF TWO FISH WITH ONLY ONE BEING A CHINOOK.

	MONTH		
	JUNE	JULY	JUNE-JULY
AVERAGE CHINOOK/MONTH/YEAR	3800	7883	11683
ESTIMATED PERCENT SAVINGS	15.9%	15.6%	16.1%
NUMBER OF FISH SAVED	604	1230	1834

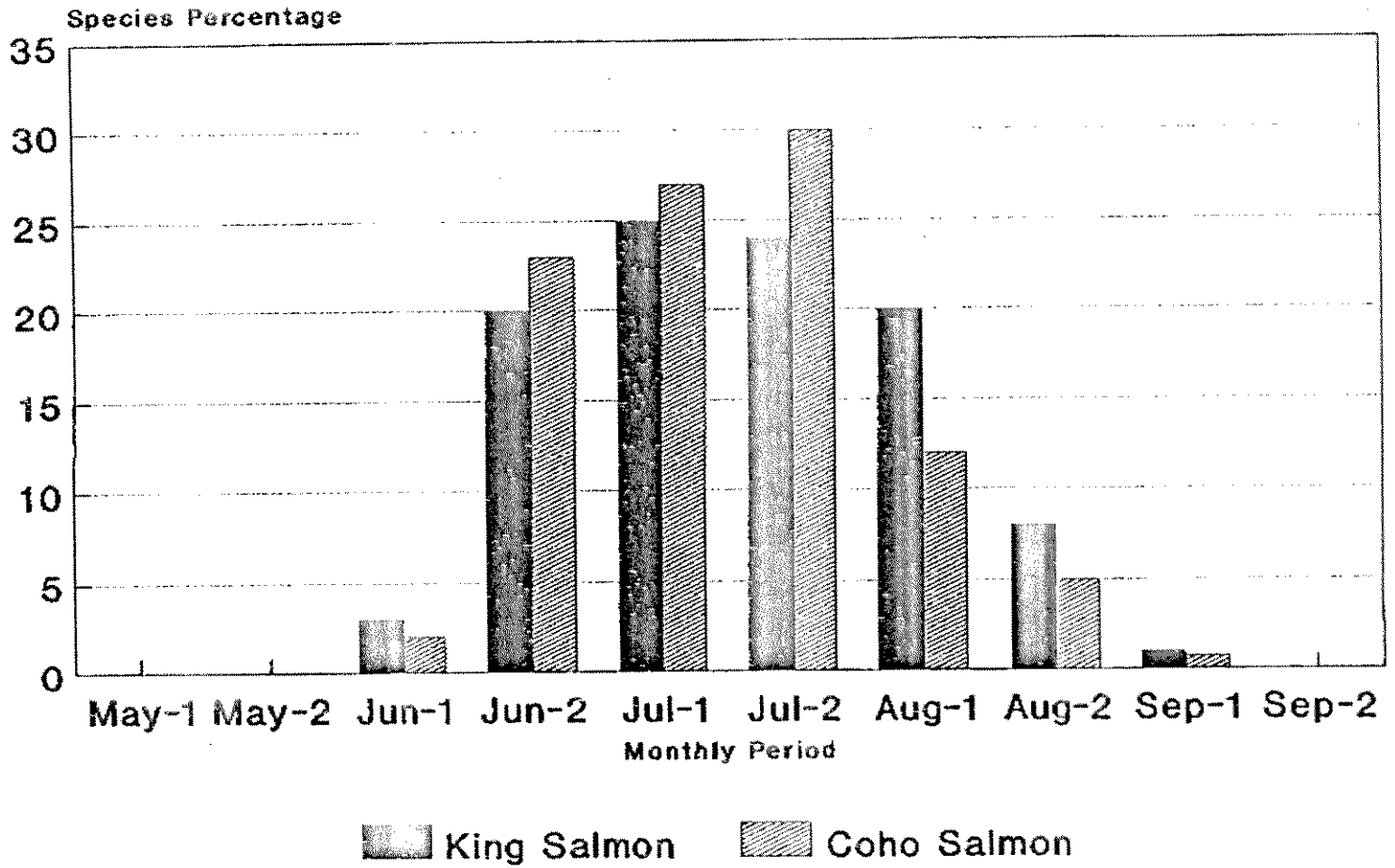
Average Recreational Salmon Catch For 1986-1990 By Species And Period



Cumulative % of 1986-90 Recreational Salmon Catch By Species And Period



Average Recreational Salmon Catch For 1981-1984 By Species And Period



Cumulative % of 1981-84 Recreational Salmon Catch By Species And Period